THE POST-MODERN HOUSE • MAY 1945

ARCHITECTURAL RECORD

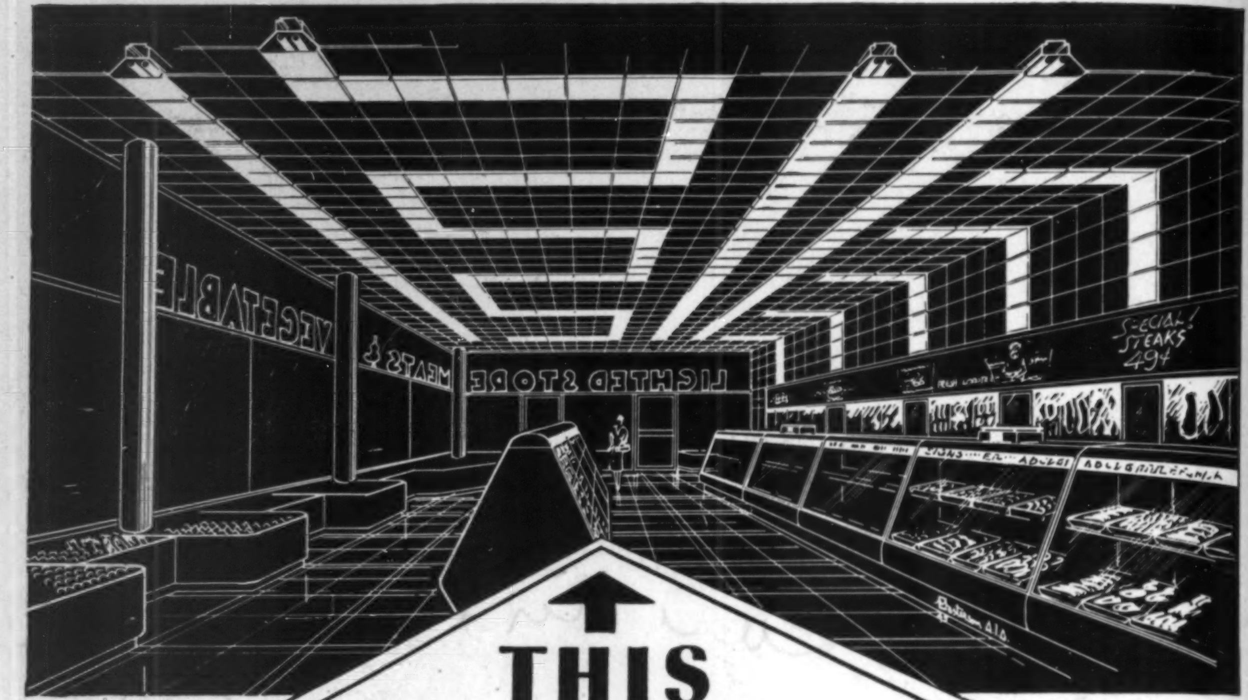
TO THE AMERICAN PEOPLE:

YOUR SONS, HUSBANDS AND BROTHERS WHO ARE STANDING TODAY UPON THE BATTLEFRONTS ARE FIGHTING FOR MORE THAN VICTORY IN WAR. THEY ARE FIGHTING FOR A NEW WORLD OF FREEDOM AND PEACE.

WE, UPON WHOM HAS BEEN PLACED THE RESPONSIBILITY OF LEADING THE AMERICAN FORCES, APPEAL TO YOU WITH ALL POSSIBLE EARNESTNESS TO INVEST IN WAR BONDS TO THE FULLEST EXTENT OF YOUR CAPACITY.

GIVE US NOT ONLY THE NEEDED IMPLEMENTS OF WAR, BUT THE ASSURANCE AND BACKING OF A UNITED PEOPLE SO NECESSARY TO HASTEN THE VICTORY AND SPEED THE RETURN OF YOUR FIGHTING MEN.

G C Marshall William D Leahy
Douglas MacArthur E J King
Dwight D Eisenhower C W Nimitz
H H Arnold



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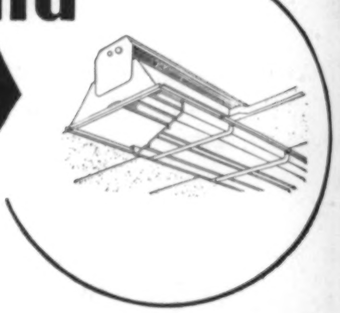
by planning around
THIS Lighting



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Selecting FLUSH VALVES FOR HOSPITALS....

● A recent survey among architects, widely experienced in hospital design, discloses a number of interesting trends in flush valve applications for hospitals. For example, there seems to be a trend toward the use of foot-operated combinations; there is a marked preference for *silent-action* flush valves. These trends and others are discussed in the booklet offered below.

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● Fitzsimmons General Hospital, Denver, Colorado. Watrous Flush Valve equipped. Architect: Construction Division of Quartermaster General's Office. Supervising Architect: L. M. Leisenring. Plumbing Contractor: Thos. F. Shea Co., St. Paul, Minn.

● Cook County School of Nursing, Chicago, Ill. Watrous Flush Valves throughout. County Architect: Eric E. Hall. Consulting Engineer: Willis J. Dean. Plumbing Contractor: E. J. Young & Co.

ARCHITECTS' VIEWS ON FLUSH VALVE APPLICATIONS

A survey of interesting trends in the selection of flush valves for postwar buildings is given in Bulletin No. 477—"How Architects Look at Flush Valve Applications". Write for your copy. See Sweet's Catalog for full information on Watrous Flush Valves.

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THE RECORD REPORTS

Construction Forecast for Interval Between V-E and V-J Days • Trends in Rural Housing • Department of Commerce Looks at Construction • New Housing Survey

Loosening up of building controls may come more rapidly than official announcements indicate. Washington administrators grant that while orders may be kept intact or ostensibly relaxed only slightly, there will be a notable easing up in the strictness with which they are applied. The thinking is that the authority must remain but that its exercise "to the letter" becomes less imperative with V-E Day. The governing factor in all cases will be the adequacy of supplies. In the case of housing, two extremely tight items, lumber and cast-iron soil pipe, will be a key to the speed with which non-defense construction can get under way. No one minimizes the severe shortage of lumber.

Officials anticipate that, for the interim period between V-E and V-J Days, the situation will vary from area to area, due not only to supplies but also to manpower needs for war production to wind up the war in the Pacific. In one vicinity, for example, housing will be in surplus; in another, it will be sorely needed. The housing shortage on the West Coast, be it noted, caused the Lanham Subcommittee of the House Committee on Public Buildings and Grounds to project a first-hand visit and investigation.

In general summary, the outlook is for opening up the production of housing components and routing more materials first for repair of existing buildings. WPB expects an influx of applications for permission to build.

Meanwhile, NHA's John B. Blandford, Jr., reports continued expansion of the H-2 housing program to relieve congestion, particularly in areas supplying demands for ammunition and ordnance, ship repair and ship building and superbomber construction. He voiced the hope that "the H-2 program will prove a valuable bridge toward reconversion of the housing industry."

"Period One" Construction

Pivotal action comes from the WPB. It is taking and will take care to integrate construction limitations closely with its other controls over scarce materials. Specifically, it has an over-all committee, known alphabetically as "CPO"—in translation, "The Committee on Period One"—to work out the relaxation of orders. (Period One, in WPB parlance, means the time between V-E and V-J Days.) A subcommittee whose chairman is John L. Haynes, regularly head of the WPB Construction Bureau, is watching particularly the status and prospects and reconversion problems of the construction industry. Assumption is that relaxation of order L-41 (construction) will be gradual, and that L-335 (lumber) in actual fact will be kept rigid for immediate needs.

Manpower will be the deciding factor in many cases. WPB feels that it would be foolish to permit construction activity in localities where it would draw manpower away from war plants. The picture, it points out, takes different shadings, both in the manufacturing end of construction and the actual building end. Some manufacturers will have only a minor reconversion problem while others, which switched to entirely new production during the war, will have paramount complications in getting back to their former civilian operations. In the building end, workmen will have to be in ready supply before priorities are given for any civilian construction project.

WPB is mapping procedure to allow construction in local areas where labor and resources cannot be used either for war production or for civilian manufacture not under limitation orders.

Reconversion First

Jimmy Byrnes, in his last report to Congress before his resignation as War Mobilization and Reconversion Director, makes clear that among construction which will be allowed in the so-called Period One, will be reconversion of industrial facilities, public utilities, rail improvements, and schools. Byrnes' close relationship to President Truman gives added strength to his views. He draws the over-all conclusion that Period One should be used to get the construction industry ready for its postwar tasks, including replenishment of pipelines with hardware, plumbing, heating, and general building equipment.

Public works programs, he warns, should be delayed until after V-J Day, although funds should be made available for preparation of plans and specifications. When the time comes for such projects, the machinery should be fully set and ready to go. He recommends that private construction should lead the way, however, and that first consideration be given to deferred maintenance and repairs. He says a good word for low-rent housing programs.

Design of Farm Buildings

Wartime construction control is bringing out an unexpected trend in rural housing. It has stimulated government agencies, particularly the

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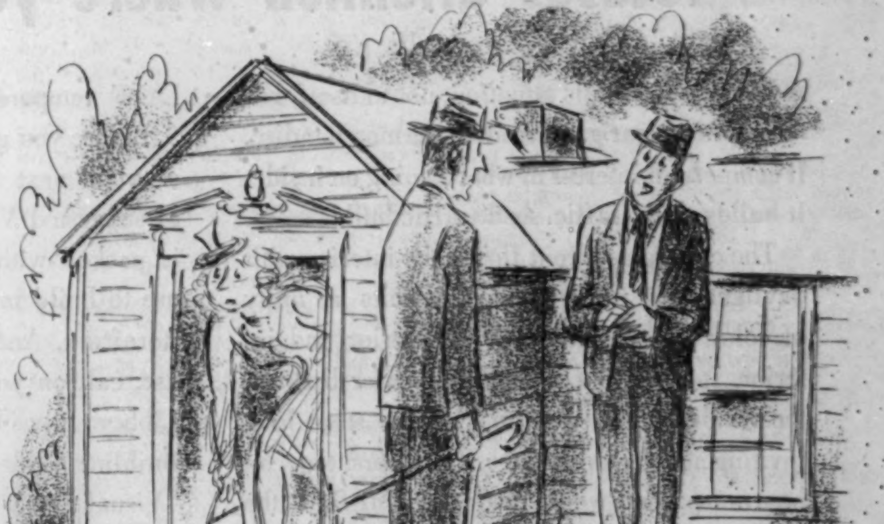
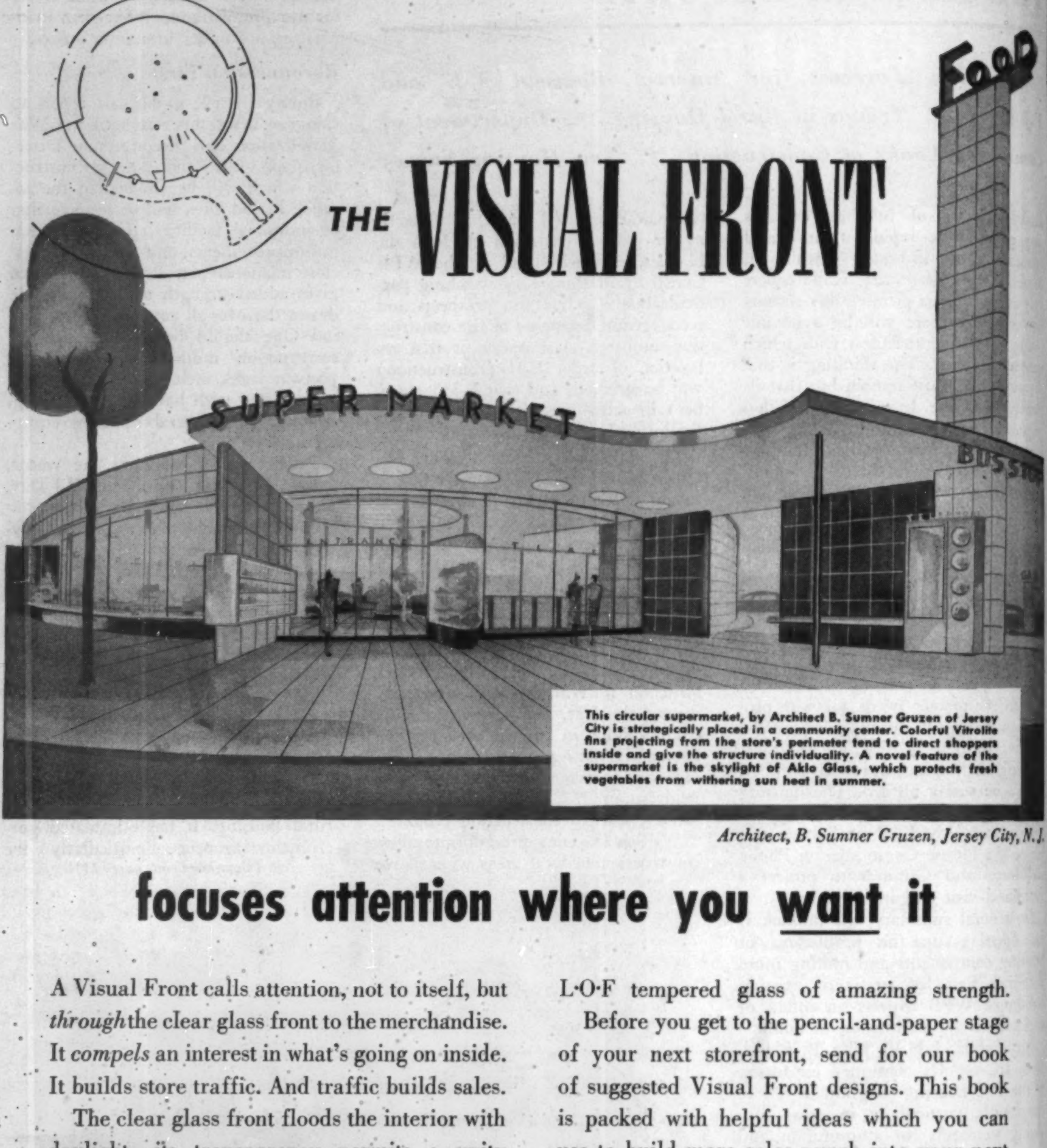


"It's the best I could do at 65 cents a cubic foot . . ."

—Drawn for the RECORD by Alan Dunn

THE VISUAL FRONT



This circular supermarket, by Architect B. Sumner Gruzen of Jersey City is strategically placed in a community center. Colorful Vitrolite fins projecting from the store's perimeter tend to direct shoppers inside and give the structure individuality. A novel feature of the supermarket is the skylight of Aklo Glass, which protects fresh vegetables from withering sun heat in summer.

Architect, B. Sumner Gruzen, Jersey City, N.J.

focuses attention where you want it

A Visual Front calls attention, not to itself, but *through* the clear glass front to the merchandise. It *compels* an interest in what's going on inside. It builds store traffic. And traffic builds sales.

The clear glass front floods the interior with daylight—its transparency permits a unity of color and design between exterior and interior. It wipes out the visual barrier between the inside and outside, making the store look inviting and easier to enter. The doors, too, can be transparent when made of Tuf-flex, the L·O·F tempered glass of amazing strength.

Before you get to the pencil-and-paper stage of your next storefront, send for our book of suggested Visual Front designs. This book is packed with helpful ideas which you can use to build more sales punch into your next storefront. And for the right glass for every use, call on your L·O·F Distributor. Write to Libbey·Owens·Ford Glass Co., 7255 Nicholas Building, Toledo 3, Ohio, for your copy of "Visual Fronts".

VISUAL FRONT
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a Great Name in **GLASS**

(Continued from page 7)

U. S. Department of Agriculture and state colleges, to turn attention to design of farm structures in the postwar period as a type of building distinct from urban residences. As these agencies are getting their heads together, they stress that farm houses have not only a residential purpose to serve but also have a functional role to play in the over-all farm plant.

While the general planning related the various buildings on the farm to each other, the blueprints, figuratively speaking, for the farmhouse itself include specific utility space as well as kitchen, dining rooms, living rooms and bedrooms. For instance, provision is contemplated for at least one utility room where milk, meat and other farm products requiring some form of processing can be handled. The thinking includes space as well for laundry work, which bulks so large in the farm wife's labors.

Various factors undoubtedly will affect the outcome of the trend as it now appears in nucleus. For one thing, types of structure and their functional needs will vary by regions, according to nature of the produce. Individual developments are anticipated and will be encouraged in each section of the country. A hampering influence will be the tendency of farmers to take slowly to change, but younger farmers, particularly those with college training, are expected to react favorably to new designs.

Government planners have in mind, among other things, making farm life more and more attractive so that young people will tend to remain in the agricultural areas rather than migrating to the cities.

For the interim period until construction controls loosen up, the hope is expressed that immediate needs in limited rural areas will be met by releasing surplus defense housing, especially demountable and portable structures. Rural areas, say officials, are unable now to get the housing necessary for the present big farm production job. They estimate that about two million farm houses need major improvements and about the same number should be entirely replaced.

Commerce on Construction

That the building upswing which is just around the V-E and V-J corner will include new features has been indicated to the Department of Commerce. A recent article in its publication, *Domestic Commerce* (Feb., 1945), on "New Materials for Postwar Building" drew double the response of a similar article a year earlier and where inquiries formerly were from individuals, a large percentage of those now requesting further information are contractors and building suppliers. Point is made by the Department that these materials in many instances can be installed in present dwellings as well as in new structures.

Despite renewed pressure brought on the Department to create a Construction Division, the prospect is that any such expansion will mark time until the Congress sees fit to provide additional funds. However, Secretary Wallace puts construction in a top place for the transition and postwar periods, and, pending action of Congress, it is understood that plans for setting up a Construction Division will be worked out so as to be ready when and if called for. Incidentally, one phase of building activity on which Department officials feel insufficient data exists is that on non-residential construction, representing about 40 per cent of total private building.

Another Housing Survey

As the Taft subcommittee on housing in April put the final touches to its report and recommendations to the Senate Committee on Postwar Planning and as the comprehensive Wagner Housing Bill neared introduction, another housing survey of no mean proportions was projected in the Senate. Basic problems of the construction industry as a whole will be gone into by the Senate Small Business Committee. Hearings, tentatively scheduled to open in May, will continue from time to time over a number of months.

Aim of the survey is not just to boost the cause of small business; the series of studies will seek to determine as well the opportunities for employment and means for reducing the number of business failures in this field. Frank Piovia will serve as a full-time consultant to coordinate the studies, and will be advised by specialists both in government and in private industry.

NHA Housing Estimates

Estimates of postwar housing needs by the NHA include the following points:

1. In the decade, 1946-55 inclusive, construction of a total of 12.6 million non-farm dwelling units will be needed.
2. About one-third of the units will be needed at rentals under $30 per month; one-third at $30 to $49 or for sale at between $3,000 and $5,000; and the remaining third at $50 or for sale at $5,000 or over.
3. Even though 12.6 million units are provided over a period of 10 years, 3.5 million substandard units would

(Continued on page 12)

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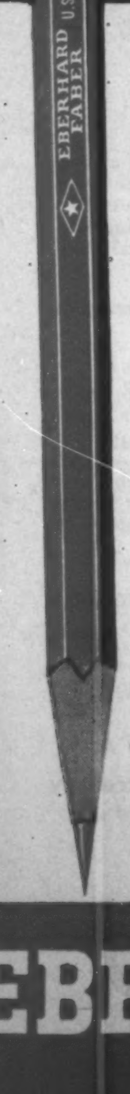

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THE RECORD REPORTS

(Continued from page 11)

remain in use at the end of the period. If all substandard units were replaced in 10 years, 16.1 million units would be required from 1946 to 1955. (A 20-year replacement period is suggested as a "reasonable goal.")

NHA emphasizes that the 12.6 million figure represents units meeting at least minimum standards of health and safety. In the last several decades, it says, most of the construction which has taken place at very low cost and rent levels has failed to meet these minimum standards, so that most of this new construction and of these conversions has been substandard from the very beginning. In the current estimates of need, however, it has been assumed that all the units to be provided are to be standard units.

◆ ◆ ◆

PRODUCERS' COUNCIL
Construction Council

A local construction industry council, representing all factors in the building industry, is urgently needed in each community to encourage the adoption of sound postwar construction policies and to remove obstacles which could materially reduce the volume of employment in the building trades after the war, according to Douglas Whitlock, president of the Producers' Council.

"As the country's second-ranking industry, construction will be vitally important to every individual community during the postwar years," Mr. Whitlock said. "We who are in the industry know too well the problems which lie ahead and the opportunities which may be lost if the over-all planning needed for a healthy construction industry is left to others.

"Many mistakes of the past can be eliminated if we collectively recognize our responsibility and take the lead in doing the planning and thinking so necessary to a stable and healthy construction industry in the years ahead.

"These local industry groups, representing every branch of construction, can render invaluable service by gathering data regarding postwar population and employment trends and by lending their support to six types of activity needed to stimulate postwar building."

To aid home builders in planning their future operations, Mr. Whitlock proposes that the local construction groups should urge that housing inventories be made in each community.

(Continued on page 128)

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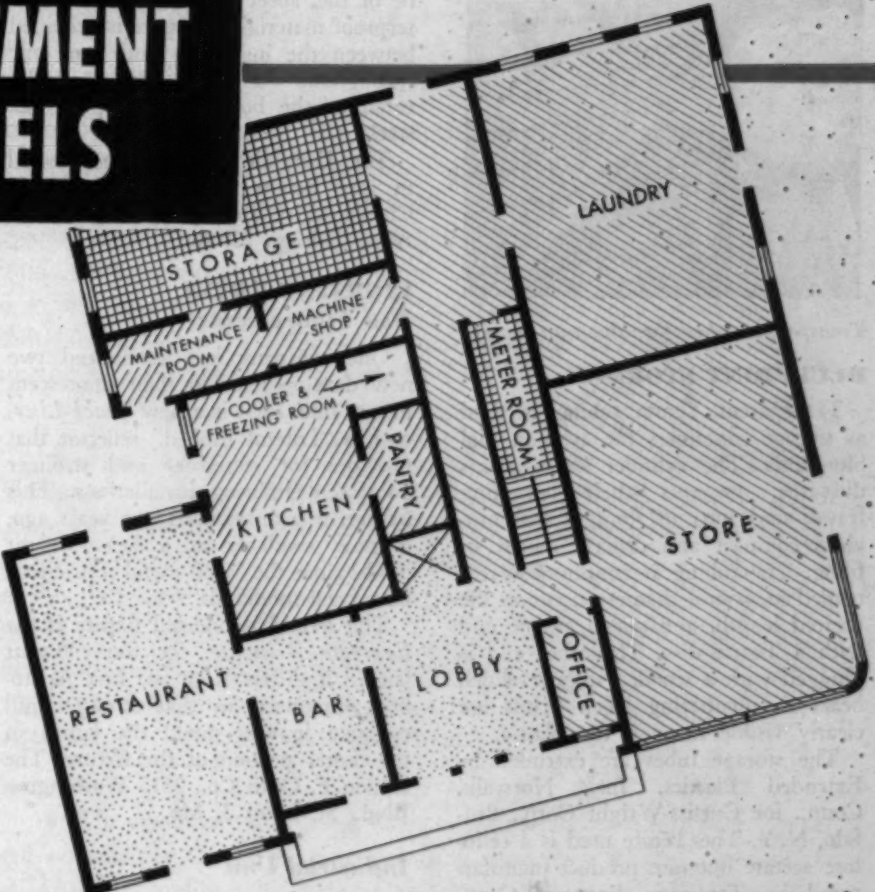

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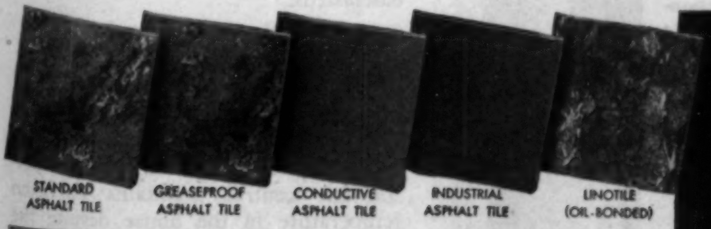
P.S. For full information about the complete line of Armstrong's Resilient Floors—including Armstrong's Conductive Asphalt Tile, a floor that prevents the accumulation of static electricity—and Armstrong's Safety Floor Coating, a new, nonslip ramp covering—consult Sweet's or write to Armstrong Cork Co., Resilient Tile Floors Department, 2405 Duke Street, Lancaster, Pennsylvania.



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Transparent tubes for blueprint storage

BLUEPRINT STORING

Transparent Tenite tubing is used as storage containers for aviation tool blueprints. The cylinder keeps prints dust-free, prevents their becoming frayed and torn in storage, and provides compact and orderly means of filing. The tubing is continuously extruded in several diameters, cut to the desired length, and sealed at one end with a Tenite disc. The other end is plugged with a wooden stopper which bears an identifying label. Prints are clearly visible through the plastic.

The storage tubes are extruded by Extruded Plastics, Inc., Norwalk, Conn., for Curtiss-Wright Corp., Buffalo, N. Y. The Tenite used is a cellulose acetate butyrate product manufactured by Tennessee Eastman Corp., Kingsport, Tenn.

SMOKE STACK

A new type of smoke stack called the *Durabilt Stack* is built like a skyscraper. It consists essentially of a hexagonal steel structure, adequately braced throughout its length to resist high wind load, shock, lightning and earthquakes. Horizontal and vertical members are attached to the steel structure and these support anchor and tile retaining castings. Each tile forming the inner wall is individually retained. The outer tile is supported by means of channels at definite spacings. Any section of tile may be independently removed without affecting the other.

One feature of the stack, according to the developers, is its insulation. This is said to fit snugly between the tile and retainer castings, providing low radiation loss, and helping to keep temperatures within the stack uniform, thereby increasing efficiency by improving draft.

Being sectionally supported, there is no cumulative load upon the fire brick lining. Less foundation is required and weight savings of approximately 33 1/3 per cent are made possible, it is claimed.

The outer casing of the stack can be of tile, sheet steel, Transite or waterproof material. Air space is provided between the insulation and outer tile throughout the stack. Vents are located at the bottom and top of the stack.

The Durabilt Stack can be erected in any height from 50 to 300 ft. Chicago Fire Brick Co., 1467 Elston Ave., Chicago 22, Ill.

LIGHTING NOTES

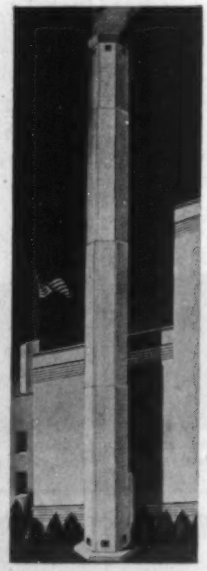
New Fluorescents

One company has announced two new developments in their fluorescent fixture line. First is a new *Quick-Liter,* with a "Lateral Ribbed" reflector that provides for straighter and stronger fluorescent lighting installations. This fixture, first announced two years ago, is now available as a heavy-weight model since the WPB metal restrictions have been modified.

The second remodeled fixture is the *Eggcrate Aristolite,* for four 40-watt lamps; it differs from the first Aristolite announced in that strong, rigid eggcrate louvers shield the lamps in the center portion of the fixture. The Edwin F. Guth Co., 2615 Washington Blvd., St. Louis 3, Mo.

Industrial Unit

A new type of fluorescent unit is an industrial unit which can also be used as an exposed troffer in certain factory office and drafting room installations. The reflector is narrower and deeper than in the first series of similar units, and is finished white Fluracite both inside and out. The series consists of four units, #1672-C, two-lamp unlouvered; #1673-C, three-lamp unlouvered; #1682-C, louvered for two 40-watt lamps; and #1683-C, louvered for three 40-watt lamps. Curtis Lighting, Inc., 6135 W. 65th St., Chicago 38.



Smoke stack of new design is sectionally supported and hexagonal in shape

MASONRY WATERPROOFING

A new material called *Creto* is said to waterproof any masonry, inside or outside, with one application either to a painted or unpainted surface, whether applied inside or outside even if the brick or stucco or concrete is wet when application is made.

The chemical, according to the manufacturers, changes component parts of masonry into one single solid mass, preserves, stops seepage and locks in alkali and lime in event the concrete is to be painted; it is claimed also that the paint will not peel or crack if Creto is applied first. Guaranteed Products, 1117 Crenshaw Blvd., Los Angeles, Cal.

Hollow cast iron "radiant baseboard"

BASEBOARD HEATING

Invisible home heating, with neither conventional radiators nor registers in a room, is the most recent development from research activities of the University of Illinois and the Institute of Boiler and Radiator Manufacturers. The new development is known as a "radiant baseboard."

Room warmth comes from a hollow cast iron baseboard supplied with hot water from a regular home heating boiler. The baseboards are painted to match woodwork of the room; pipe connections from the boiler are concealed in boxes at the ends of the baseboards.

COMFORT HEATING

Adaptable to any automatically-fired hot water heating system, the *Hoffman Comfort Package* continually circulates the water in the system and by thermostatic control maintains an even temperature in the house despite the temperature outdoors. The Comfort Package consists of four units—the cir-

(Continued on page 134)

Public Health—Your Opportunity!

◆ "To your very good health!" It's the standard toast, and with good reason, for it is the basic human good. No one would argue the fact that health is the prime requisite for the welfare of the individual—or of the nation. The war brings out the facts about the nation's health by examining millions of men for the services. "Four-Fs" number some four and one half million found unfit for military duty because of physical or mental defects.*

◆ Many agencies, public and private, have labored and are active promoting health. Yet it is only now that a *comprehensive*, integrated, nationwide program is before Congress—a bill "to amend the Public Health Service Act, to authorize grants to the states for surveying their hospitals and public health centers and for planning construction of additional facilities and to authorize grants to assist in such construction." (Bill S. 191) It brings about the hospital construction program which has been so ably and wisely worked out by the Hospital Facilities Section of the U. S. Public Health Service.† Preliminary estimates indicate that "such construction" would amount to some three billion dollars.

◆ The bill's basic objectives have been endorsed by the A.I.A. Directors and its Committee on Hospitalization and Public Health. In his statement to the Senate Committee, Mr. D. K. Este Fisher, Jr., said: "We, therefore, urge that the bill, as finally presented, be so worded as to insure the inclusion of architects, or recognized hospital experience in both State advisory councils and the Federal Advisory Council called for in the bill. In this way they will not only be able to contribute their technical knowledge and training in planning, but to assist in setting up and maintaining those standards of design and construction which will be so important a part of a successful accomplishment."

◆ The enactment of this bill offers to the architectural profession an unprecedented opportunity "to be of ever-increasing service to society." And to the competent individual architectural firm an opportunity to devote its talents to the creation of better, integrated health facilities—city, town and rural—in its own locality.

◆ It is an opportunity and a responsibility, for there is no assurance that architects may or will play the important part they should in public health *unless* they take immediate steps to contribute time, thought and effort to further the adoption of such a program and its implementation in their states and regions.

Kenneth K. Stowell

EDITOR

** For an illuminating presentation of the whole health situation, and a "coordinated hospital service plan," it will pay every architect to read the "Interim Report from the Subcommittee on Wartime Health and Education." January 1945, U. S. Government Printing Office.*

† See "More and Better Hospitals," Henry H. Saylor, Journal of the A.I.A., November, 1944,

THE POST-MODERN HOUSE

By Joseph Hudnut

Bachrach

JOSEPH HUDNUT, *Dean of Harvard's Graduate School of Design, is the logical critic to present this provocative philosophy because his own progressiveness, as well as his penetrating mind and persuasive pen, compel attention to the reminder that "houses will still be built out of human hearts." He challenges architects to push forward beyond the "engineered house"—"God forgive us"—to something that will not only facilitate the daily functions of humans, but also illumine their lives.*

I HAVE been thinking about that cloudburst of new houses which as soon as the war is ended is going to cover the hills and valleys of New England with so many square miles of prefabricated happiness. I have been trying to capture one of these houses in my mind's eye, to construct there its form and features, to give it, if you will pardon me, a local habitation and a name.

In this effort I have not been widely aided by the architectural press. I am shown there the thousand ways in which architects exploit the new inventions of industry. I am made aware of new techniques of planning and the surprising gadgets with which our houses are to be threaded. I perceive also the aesthetic modes which these innovations have occasioned: the perforated box, the glorified woodshed, the house built on a shelf, the house with its bones "dynamically exposed." These excite my imagination; and yet they fail somehow to furnish it with that totality of impression toward which these experiments in structure and physiognomy are or ought to be addressed. It seems to me that these houses with some exceptions have left unexhibited that *idea* which is the essential substance of a house. I do not discover in them that emotional content which might cement their curious shapes, that promise which in architecture is the important aspect of all appearances.

My impression is obviously shared by a very wide public and I think that this circumstance explains in part the persistence with which people, however enamoured of science, cling to the familiar patterns of their houses. Among the soldiers who write letters to me there is, for example, one in New Guinea who asks me to provide the new house which I am to build for him with every labor-saving device known to modern science and every new idea in planning, in building materials and in air conditioning, and who ends his letter with the confident hope that these will not make the slightest change in the design of the house. He has in mind, if I have understood him correctly, a Cape Cod cottage which, upon being opened, will be seen to be a refrigerator-to-live-in. I shouldn't be surprised to learn that his requirements reflect accurately those of the Army, the Navy, the Marines, the WAC, and the WAVES.

Our soldiers and sailors are already sufficiently spoiled with flattery and yet I must admit that here

Design

is still another instance in which their prescience overleaps our judgment. Beneath the surface naiveté of my soldier's letter there is expressed an idea which is of critical import to architecture: a very ancient idea, to be sure, but one which seems to be sometimes forgotten by architects. The total form and ordinance of our houses are not implied in the evolution of building methods or utilities. They do not proceed merely from these; they cannot be imagined wholly from these premises. In the hearts of the people at least they are relevant to something beyond science and the uses of science.

Now I think that this relevance—which our soldier quaintly discovers in the Cape Cod cottage—is obscured in our contemporary practice by two interests: interests which are sometimes related and sometimes distinct. One of these has its source in a professional delight in the swift march of our triumphant technologies; the other in an excessive concern for aesthetic effects for their own sake—and especially in these effects when they are specific to our new methods of construction. There is a very large number of architects nowadays who assume the attitudes and ideals of scientists, finding a sufficient reward for their work in the intellectual satisfactions afforded by technologies. Some of these appear to be quite indifferent to the formal consequences of their constructions, beauty being a flower which will spring unbidden from beneath their earnest feet; while others discover with such an excess of fervor the aesthetic and dramatic possibilities of their new structures that they forget to ask if these are appropriate to the idea to be expressed. There are also architects, highly praised by museum critics, who take little note of science, or indeed of professional competence in general, except as a source of new abstractions in materials and in space, the exciting elements of a precious and very exclusive Heaven.

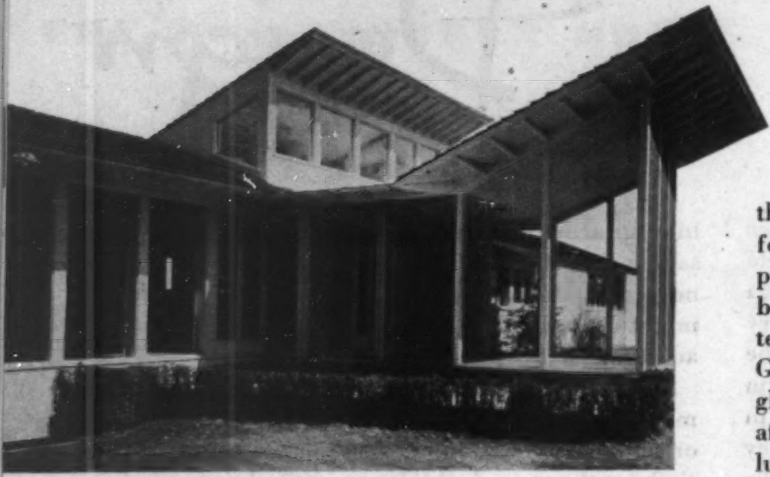
I am constantly surprised by the vehemence with which architects assert the scientific nature of their activities. They will allow no felicity of form to go unexplained by economic necessity or technical virtuosity. Beauty cannot be enjoyed until justified as a consequence of the slide-rule, and frequently her presence in their calculated halls will be acknowledged only after a heated argument.

The other day, when talking to an architect, I made a most unfortunate slip of the tongue: I called him an artist. He challenged me at once to a duel, saying that the word is one which in our profession no gentleman would use toward another. *Designer* might be said thoughtlessly or in jest, but *artist* admitted of no possible reconciliation.

I am for every change in construction or equipment or organization which will promote comfort or security or economy in the modern house. Nevertheless, there is, I think, an attitude of mind, a valuation or—perhaps more precisely—a way of working which is more important in architecture than our science and which is by no means universal in our practice. I mean that way of working which gives to things made by men and to things done by men qualities beyond those demanded by economic or social or moral expediency, the way of working which complements utility with the spiritual qualities of form, sequence, rhythm, felt relationships. I mean that kind of making and doing which illumines life, gives it meaning and dignity and which, through education, makes life a common experience. I mean, in short, that search for expression which transforms the science of building into the art of architecture.

If a dinner is to be served, it is art which dresses the meat, determines the order of serving, prepares and arranges the table, establishes and directs the conventions of costume and conversation, and seasons the whole with that ceremony which, long before Lady Macbeth explained it to us, was the best of all possible sauces. If a story is to be told, it is art which gives the events proportion and climax, fortifies them with contrast, tension and the salient word, colors them with metaphor and allusion, and so makes them cognate and kindling to the heart. If a prayer is made, it is art which sets it to music, surrounds it with ancient observances, guards it under the solemn canopies of great cathedrals.

The shapes of all things made by man are determined by their functions, by the laws of materials and the laws of energies, by marketability (sometimes) and the terms of manufacture; but these shapes may also be determined by the need, more ancient and more imperious than your crescent techniques, for some assurance of importance and worth in those things which encompass humanity. That is true also of all forms of doing, of all patterns of work and conduct and pageantry. It is true of



Hedrich-Blessing

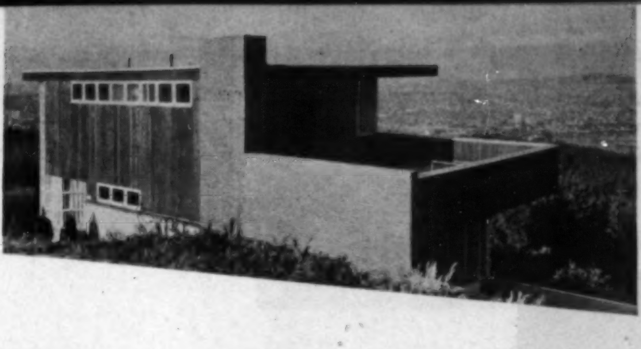
"That mighty cantilever which projects my house over a kitchen yard or a waterfall, the lacustrian vertiginous, Lally column, the 'stressed skin' and the flexible wall . . . these strike my eyes but not my heart"

Elmer L. Astleford

the house and of all that takes place in the house; for here among all things made by man is that which presses most immediately upon the spirit—the symbol, the armor, and the hearth of a family. The temple itself grew from this root; and the House of God, which architecture celebrates with her most glorious gifts, is only the simulacrum and crowning affirmation of that spiritual knowledge which illumined first the life of the family and only afterwards the lives of men living in communities.

Here is that *shelter* which man shaped in the earth one hundred thousand years ago, the pit which became the wattle hut, the cave, the mound dwelling, the mandan lodge and the thousand other constructions with which our restless invention has since covered the earth: the *shelter* which in a million forms has accompanied his long upward journey, his companion and shield and outer garment. Here is that *home* which first shaped and disciplined his emotions and over centuries formed and confirmed the habits and valuations upon which human society rests. Here is that *space* which man learned to refashion into patterns conformable to his spirit: the space which he made into architecture.

This theme, so lyrical in its essential nature, can be parodied by science. An excess of physiological realism, for example, can dissemble and disfigure the spirit quite as ingeniously as that excess of sugar which eclecticism in its popular aspect pours over the suburban house. A "fearless affirmation" of the functions of nutrition, dormation, education, procreation and garbage disposal is quite as false a premise for design as that clutter of rambling roofs, huge chimneys, quaint dormers, that prim symmetry of shuttered window and overdoor fanlight, which forms the more decorous disguise of Bronxville and Wellesley Hills; nor have I a firmer faith in the quaint language and high intentions of those sociologists who arrive at architecture through "an analytical study of environmental factors favorable to the living requirements of families considered as instruments of social continuity." I am even less persuaded by biologists: especially those who have created a vegetable humanity to be preserved or cooled or propagated in boxes created for those purposes. I mean those persons who make diagrams and action-photographs showing the impact upon space made by a lady arranging a bouquet or a gentleman dressing for dinner or 3.81 children playing at kiss-in-the-ring—and who then invite architects to fit their rooms around these "basic determinants." My requirements are somewhat more subtle than those of a ripe tomato or a caged hip-



popotamus, whatever may be the opinion of the Pierce Foundation.

Now I do not advocate a return to the Cape Cod cottage, however implacably technological its interior—still less a return to that harlequinade of Colonial, Regency, French Provincial, Tudor, and Small Italian Villa, the relics and types of our ancestor's inexhaustible inventiveness, which adds such dreary variety to our suburban landscapes. I think we may assume, a soldier's taste notwithstanding, that that adventure is at an end. Yet I sometimes think that the eclectic soul of these suburbs is, by intuition if not by understanding, nearer the heart of architecture than those rigid minds which understand nothing but the economics of shelter and the arid technicalities of construction. Among the architects of the late XIX Century there were no doubt many who were merely experimenters in the science of taste and many who were merely merchant-architects, their shelves well-stocked with marketable prejudices; but are not these the plague of every era? There were also architects in those days who, however they may have leaned upon history, yet conceived their houses as invitations to the spirit. We are at home in these houses even though our world cannot enter with us. Inapposite as they are to our times, they yet represent an art of escape which was at least widely authentic: an art of escape, but nevertheless an art.

I am inclined to explain the persistence of the styles of architecture on some other ground than that of association, although of course that is an important factor. We are not all fools of habit. I think that we overlook the way in which these inherited patterns sometimes recapture the idea once expressed—more eloquently to be sure—by their prototypes. After they have ceased to have any harmony with modern techniques of construction or with modern habits of living they yet speak to us of peace and security, of romantic love and the tender affection of children, of an adventure re-lived a thousand million times; we understand them as we understand a song sung in a language unknown to us. They remain, however alien to the business of life, the elements of an art.

We have developed in our day a new language of structural form. That language is capable of deep eloquence; and yet we use it only infrequently for the purposes of a language. Just as the styles of architecture are detached from modern technologies and by that detachment lose that vitality and vividness which might come from a direct reference to our own times, so our new motives are detached from the idea to be expressed. They have their origin not in the idea but in techniques. We have not yet learned to give them any persuasive meanings. They have interesting aesthetic qualities, they arrest us by their novelty and their theater, but they have nothing to say to us.

The architects of the Georgia tradition were as solicitous of progress and designed their houses with the same care for serviceability that they spent on the design of a coach, and yet their first consideration was for their way of life. When I visit the streets of Salem I am not so confident as are some of my colleagues that they suffered from a limited range of materials and structural methods. We are too ready to mistake novelty for progress and progress for art. I tell my students that there were noble buildings before the invention of plywood. They listen indulgently but they do not believe me.

We have to defend our house not only against the new techniques of construction but also against the aesthetic forms which these engender. We must remember that techniques have no inherent values as elements of expression; their competence lies in the way we use them. However they may interest us, they have no place in the design of a house unless they do indeed serve the purposes of the home and are congenial to its temper. When, as often happens, their only virtue is their show, their adventitious nature is soon realized; they are as great a burden to our melody as an excess of ornamentation. That mighty cantilever which projects my house over a kitchen yard or a waterfall, the lacustrian vertiginous Lally column, the "stressed skin" and the flexible wall, the fanaticisms of glass brick, the strange hoverings of my house above the firm earth: these strike my eyes but not my heart. A master can—at his peril—use them; but for human nature's daily use we have still proportion, homely ordinance, quiet wall surfaces, good manners, common sense and love. These also are excellent building materials.

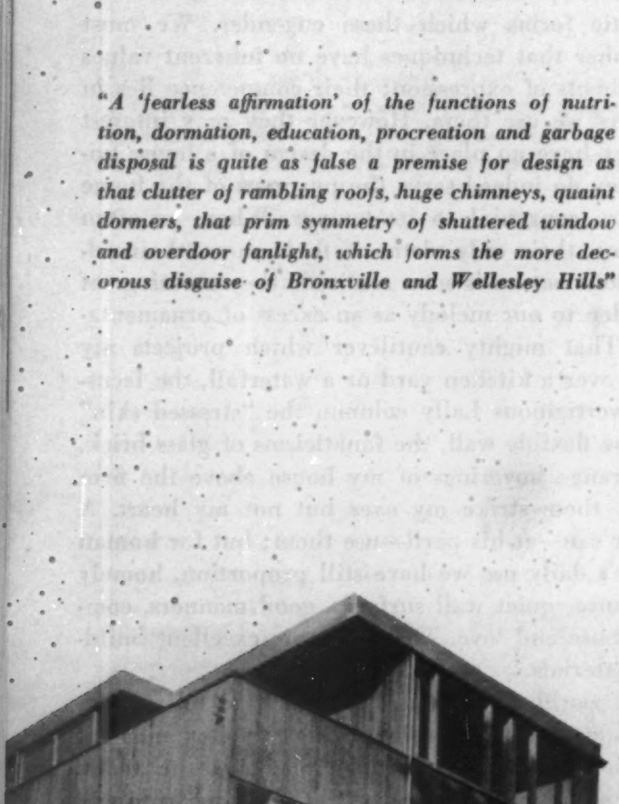
The world will not ask architects to tell it that this is an age of invention, of new excitements and experiences and powers. The airplane, the radio, the V-bomb and the giant works of engineering will give that assurance somewhat more persuasively than the most enormous of our contraptions. Beside the big top of industry our bearded lady will not long astonish the mob.

It should be understood that I do not despise the gifts of our new sciences; and certainly the architects of the 1920's—Le Corbusier, Oud, Mies van der Rohe, and Gropius—made convincing demon-

"When I think of all these elements, so varied, so impressible, so unhackneyed, which lie at our hand. . . . I am astonished that architects should have need of a science to sustain their role in the life of our times. . . . Our forfeit is that we must look (and think) like an engineer. We must have — God forgive us — an engineered house"

Harry. Hartman

"A 'fearless affirmation' of the functions of nutrition, dormation, education, procreation and garbage disposal is quite as false a premise for design as that clutter of rambling roofs, huge chimneys, quaint dormers, that prim symmetry of shuttered window and overdoor fanlight, which forms the more decorous disguise of Bronxville and Wellesley Hills"



strations of the utility of these in an art of expression. They used structural inventions not for their own sake or yet for the sake of economy and convenience merely but as elements in a language. Functionalism was a secondary characteristic of their aristocratic art which had as its basic conception, so far as this is related to the home, a search for a form which should exhibit a contemporary phase of that ancient aspect of life. To this end new materials were used, old ones discarded; but the true reliance was not upon these but upon new and significant relationships among architectural elements—among which enclosed space was the prime medium, walls and roofs being used as a means of establishing spatial compositions. To compose in prisms rather than in mass, to abolish the facade and deal in total form, to avoid the sense of enclosure, to admit to a precise and scrupulous structure no technique not consonant with the true culture of our day: these were the important methods of an architecture never meant to be definitive or "international"—which offered rather a base from which a new progress might be possible, a principle which should have its peculiar countenance in every nation and in every clime. I should not venture here to restate a creed already so often stated had not a torrent of recent criticism distorted this architecture into a "cold and uncompromising functionalism," had it not been made the excuse for an arid materialism wholly alien to its intention.

We must rely not upon the wonder and drama of our inventions but upon the qualities, beyond wonder and beyond utility, which we can give them. Take, for example, *space.* Of all the inventions of modern architecture the new space is, it seems to me, the most likely to attain a deep eloquence. I mean by this not only that we have attained a new command of space but also a new quality of space. Our new structure and our new freedom in planning—a freedom made possible in part at least by the flat roof—has set us free to model space, to define it, to direct its flow and relationships; and at the same time these have given space an ethereal elegance unknown to the historic architectures. Our new structure permits almost every shape and relationship in this space. You may give it what proportion you please. With every change in height and width, in relation to the spaces which open from it, in the direction of the planes which enclose it, you give it a new expression. Modern space can be bent or curved; it can move or be static, rise or press downward, flow through glass walls to join the space of patio or garden, break into fragments around

Haskell

alcoves and galleries, filter through curtains or end abruptly against a stone wall. You may also give it balance and symmetrical rhythms.

If then we wish to express in this new architecture the idea of *home*, if we wish to say in this persuasive language that this idea accompanies, persistent and eloquent, the forward march of industry and the changing nature of society, we have in the different aspects of space alone a wide vocabulary for that purpose.

I have of course introduced this little dissertation on space in order to illustrate this resourcefulness. I did not intend a treatise. I might with equal relevance have mentioned light which is certainly as felicitous a medium of modern design, or the new materials which offer so diversified a palette of texture and color, or the forms and energies of our new types of construction, or of the relationships to site and to nature made possible by new principles of planning. There are also the arts of painting and sculpture, of furniture-making, of textiles, metal ware and ceramics—all of which are, or ought to be, harmonious accessories to architecture.

When I think of all these elements, so varied, so impressible, so unhackneyed, which lie at our hand ready to be fused into the patterns of our houses, I am astonished that architects should have need of a science to sustain their role in the life of our times. Science, I sometimes think, is a defense mechanism, at least in part. We were at too great pains a generation ago to advertise the romantic overtones of our art; we must now live down our reputation, only too well-deserved, as decorator and dealer in sentiment; and we display this haircloth to reassure those practical-minded who might otherwise prefer the engineer. Our forfeit is that we must look (and think) like an engineer. We must have—God forgive us—an engineered house.

I have heard architects explain with formulae, calculation, diagram and all manner of auricular language, the advantages of the glass wall—of wide areas of plate glass opening on a garden—when all that was necessary was to say that here is one of the loveliest ideas ever entertained by an architect. People who *feel* walls do not need to compute them; and people who are deaf to the rhythms of great squares of glass relieved by quiet areas of light-absorbing wall may as well resign the enjoyment of architecture. Because we are free of those "holes punched in the wall," of that balance and stiff formalism in window openings which proclaim the Georgian mode, because we can admit light where we please and in what quantity we please, we have in effect invented a new kind of light. We can direct light, control its intensity and its colorations; diffuse it over space, throw it in bright splashes against a wall, dissolve it and gather it up in quiet pools; and from those scientists who are at work on new fashions in artificial light we ought to expect not new efficiencies merely or new economies merely, but new radiances in living.

Of course I know that modern architecture must adjust its processes to the evolving pattern of industry, that building methods must attain an essential unity with all the other processes by which in this mechanized world materials are assembled and shaped for use. No doubt the wholesale nature of our constructions imposes upon us a monotony and banality beyond that achieved by past architectures—a condition not likely to be remedied by prefabrication—and no doubt our houses, as they conform more closely to our ever-advancing technologies, will escape still further the control of art. Still more inimical to architecture will be those standardizations of thought and idea already widely established in our country; that assembly-line society which stamps men by the millions with mass attitudes and mass ecstasies. Our standards of judgment will be progressively formed by advertisement and the operations convenient to industry.

I shall not imagine for my future house a romantic owner, nor shall I justify this client's preferences as those foibles and aberrations usually referred to as "human nature." No, he shall be a modern owner, a post-modern owner, if such a thing is conceivable. Free from all sentimentality or fantasy or caprice, his vision, his tastes, his habits of thought shall be those most serviceable to a collective-industrial scheme of life; the world shall, if it so pleases him, appear as a system of casual sequences transformed each day by the cumulative miracles of science. Even so, he will claim for himself some inner experiences, free from outward control, unprofaned by the collective conscience. That opportunity, when all the world is socialized, mechanized and standardized, will yet be discoverable in the home. Though his house is the most precise product of machine processes, there will be entrenched within it this ancient loyalty invulnerable against the buffetings of the world.

It will be the architect's task, as it is now, to comprehend that loyalty—to comprehend it more firmly than any one else—and, undefeated by all the armaments of industry, to bring it out in its true and beautiful character. Houses will still be built out of human hearts.

Space

FLEXIBILITY FOR THE SMALL HOUSE

By Royal Barry Wills

The author, recognized by millions of magazine readers and hundreds of clients as a master of the small-house plan, looks forward to plan innovations to be expected when a postwar clientele demands better living. With characteristic realism he points to cost, up at least 30 per cent—a sobering thought in relation to the benefits of the open plan. The answer is not just more space, but more flexible, more useable space, a practical goal toward which he addresses these dozens of planning suggestions

Although people in general will have more money to spend after the war, it is doubtful if their increased buying power will compensate for the increased cost of construction. The increase is widely expected to be 30 per cent or more. We must be just as careful as ever how we use space, and how we waste it.

While small house building has been at a standstill, it was entirely natural—indeed, necessary—for architects and engineers to let their imaginations run, to register as much advance as possible in a world suddenly tuned to technological miracles. But it is easy in such a period to lose track of cost, to forget the close relationship of space and cost in small house design. Space has always cost money; it always will.

But we must not simply forget about progress. Social and economic changes have been speeded by the war. Ideas are changing. Houses will change, too. Space will be arranged differently, for differing ways of living. Our problem, then, for the small house, is to use space more effectively, not simply to increase it.

Modern vs. Traditional

It is regrettable that it is so difficult to get a dispassionate discussion of the relative advantages of modern and traditional houses. Architects have been prone to espouse one theory or the other so ardently that the real truth was as obscure as in a political contest. Meanwhile most house clients seem to cling to the styles of their ancestors. They do want—and ought to have—many of the new features and conveniences of the freer, more modern plans.

While it is true that traditional design, when adhered to too strictly, does have a tendency to dictate a preconceived plan unsuited to today's requirements, it ought to be possible for the skilled architect to make traditional forms adaptable to newer plan ideas.

Modern has certain advantages in the flexibility of rooms through the use of curtains and sliding partitions (whereas traditional rooms are often unimaginatively designed for a fixed purpose) provided this flexibility is not defeated by too many built-in installations.

Modern has a distinct advantage in the fact that symmetry is not required in the grouping of furniture and architectural features, and therefore space can be used almost at its maximum value. Traditionalists might argue that, except in the more stilted forms, one does not have to depend on symmetry to get a happy result with traditional designs.

The freedom of modern allows for unlimited use of line, form, color, and lighting to create any desired effect, without respect to the dictates of the past. Unfortunately, many of these advantages are nullified by the forced avoidance of any emulation of traditional forms and methods. When modern gets out of control there are no time-proven rules to restrain it from being expensive and in obvious poor taste. In the past few years, unhappy caricatures of the Cape Cod cottage have hurt the name of this gay, informal little house. Bad as these efforts may have been, I shudder to think of the results of equally unrestrained use of modern among our operative builders. To sum up, modern has most of the advantages if it uses them wisely, and most of the disadvantages if it does not.

Dual-Purpose Rooms for Postwar Houses

There are all kinds of room arrangements and combinations of room arrangements which will give a feeling of space. We can often combine living and dining room to good advantage in one big area, but in so doing must get an improved arrangement so far as actual living is concerned.

Since most small-house families appear to eat in the kitchen, it is better, provided the dining room is omitted, to plan the house so that the eating space in the kitchen is entirely adequate and suitable for everyday eating, and the living room is used for eating only when large groups are entertained. There are various arrangements for combination kitchen-dining rooms, and these may be so worked out that dining in the kitchen may prove to be almost as pleasant as in a separate dining room.

All-Purpose Room. Assuming that eating may be done in the kitchen, it is now possible to arrange a small-house plan with a living room, a kitchen, and an *all-purpose room* on the first floor. This all-purpose room should be so placed that it may be used for any activity going on in the household. It must be borne in mind that from time to time during the life of the occupants of a house activities vary greatly. For a period of years a playroom on the first floor may be the most important room in the house. In the years subsequent, a room which may be used for occasional group dining is much more important than a playroom. At other times an office becomes desirable to the man of the house.

An all-purpose room should be so located that it may be used for all kinds of activities, but that does not mean it will be used as a playroom from 9 to 12, as a dining room from 12 to 1, as an office from 4 to 6, and as a sick room for the rest of the 24 hours. It simply means that it is a more flexible room than that customarily associated with a dining room, a study or a guest room.

Dual-Purpose Sleeping Rooms. Many other rooms in the small house may have this dual purpose. We all know that even the living room must do double duty as a bedroom on occasion. So we might as well design a living room so that it may be used as a sleeping room as gracefully as possible.

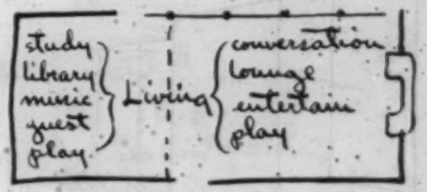
In line with this thought, it is most important that bedrooms be so arranged that they may be used as study-living rooms by the occupants.

While we are talking about dual-use rooms, we must remember that real houses are for real people, who will live, sleep and eat in these houses. They will have sick babies to care for, and there will be big washes to do and no help to do them. They will not get their dishes washed and the house cleaned up until it is bedtime, and then it is time to go to bed.

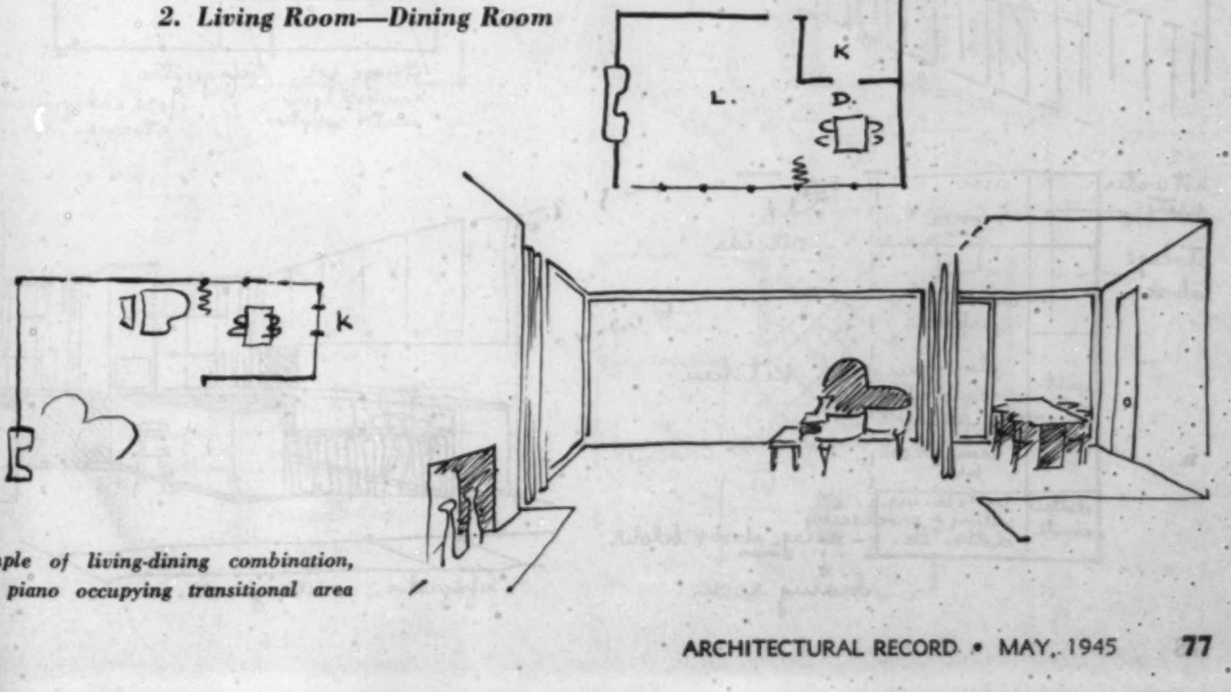
On the basis of the thought of this very busy family, it is best that they should have one room which can be "picked-up" at all times, the living room; the all-purpose room which we have mentioned before, which should be out of sight so that it can be pretty well cluttered; and the kitchen-dining room, which I suppose will be cluttered most all the time. This, then, is our basic plan for the small house after the war.

1. *All-Purpose Living Room*

As often happens in middle class homes as well as in minimum housing—the living room must serve for study and library, music room, play and hobby space, and even guest room. Therefore extreme flexibility of furniture groupings must be planned for and space carefully provided to store the equipment and supplies for many activities. If the area allowed for living room is large enough to equal two decently sized rooms, there could be an adjustable partition separating quiet-private and noisy-public activities. Otherwise the solution must just be "areas of activity" with furnishings grouped accordingly.

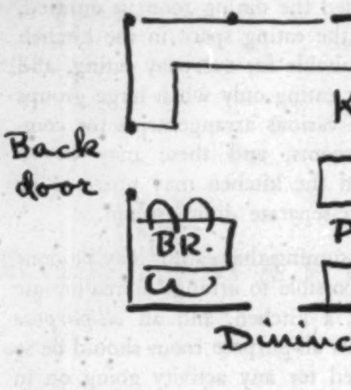


2. *Living Room—Dining Room*



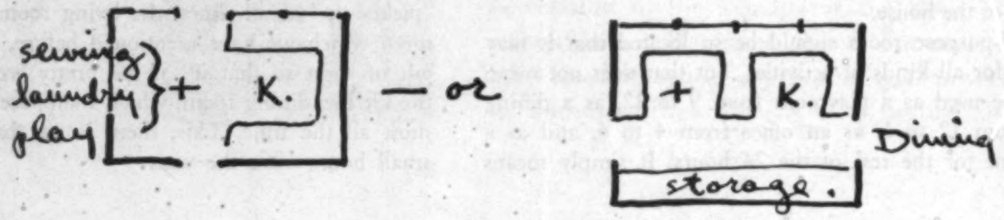
Example of living-dining combination, with piano occupying transitional area

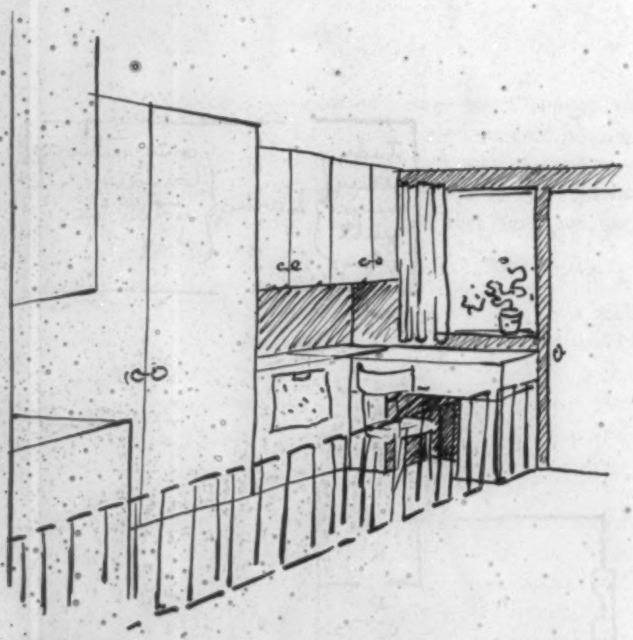
3. *Kitchen, Breakfast room (either or both) and Pantry*

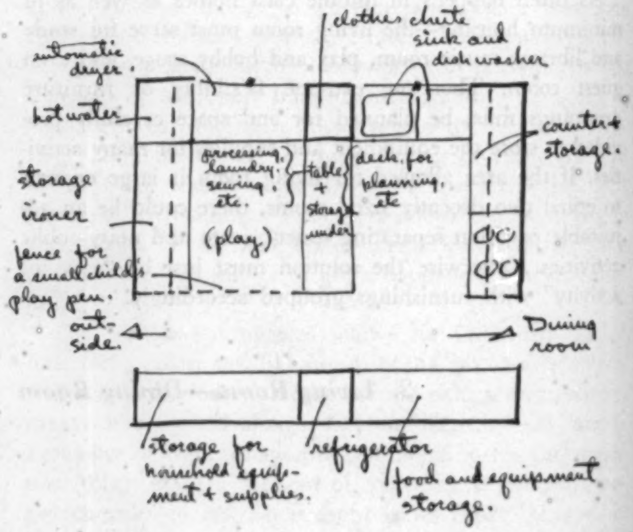

K.
Back door
P.
BR.
Dining

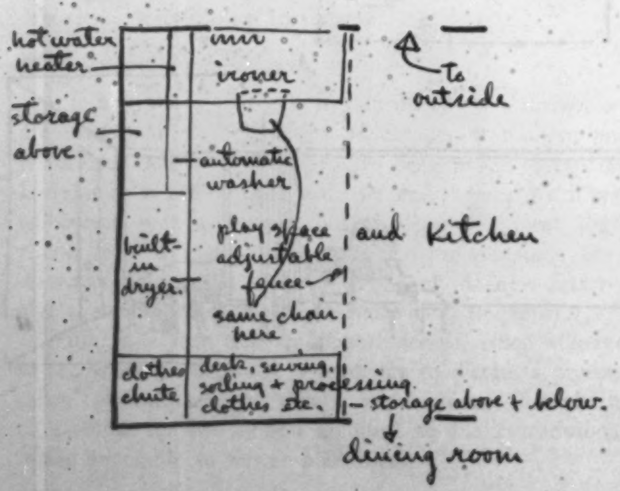
4. *Kitchen—Laundry—Sewing—Play*

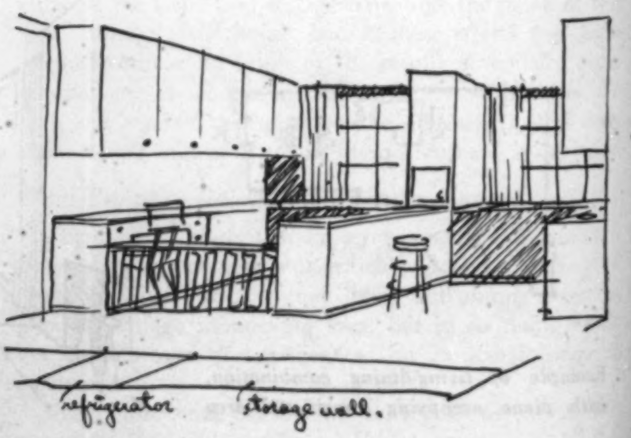
There are several activities of the housewife that are allied to kitchen duty and could be tended to alternately with cooking. A small space off the kitchen could be a play space for a small child, a compact laundry, a sewing room for "pick up" work while things cook, or all three, if properly planned.


sewing
laundry
play
+
K.
—or
+
K.
Dining
storage.



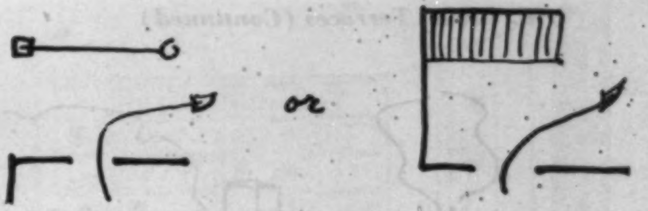

clothes chute
sink and dish washer
automatic dryer
hot water
counter + storage.
processing, laundry, sewing etc.
table + storage under
desk for planning etc.
storage
ironer
(play)
fence for a small child's play pen.
out-side.
Dining room
storage for household equipment + supplies.
refrigerator
food and equipment storage.

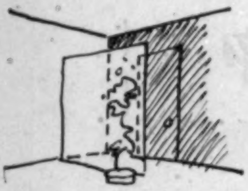

hot water heater
ironer
To outside
storage above.
automatic washer
play space adjustable fence
and kitchen
built-in dryer.
same chair here
clothes chute
desk, sewing, sorting + processing clothes etc.
storage above + below.
dining room

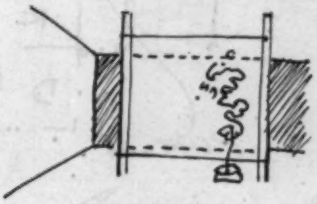

refrigerator
storage wall.

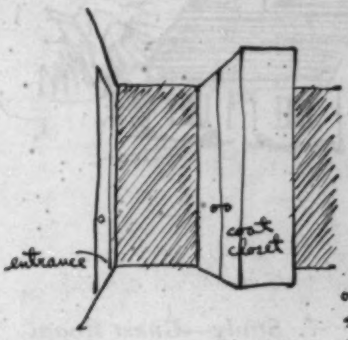
5. *Many Entrance Functions*

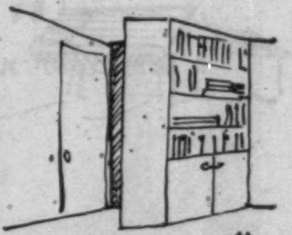
The house entrance and its accessories offer several changes in saving space as contrasted to separate vestibule, stair hall, lavatory, powder room, coat closet, telephone booth, etc. It can be reduced to as little as a screen or coat closet forming the transitional area.




out from the wall –

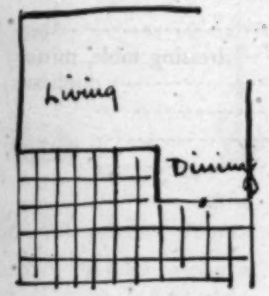

or free-standing

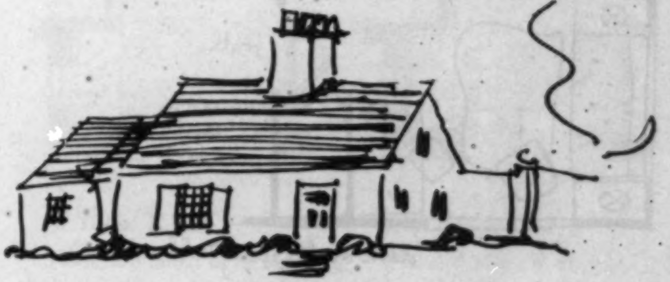

entrance
coat closet

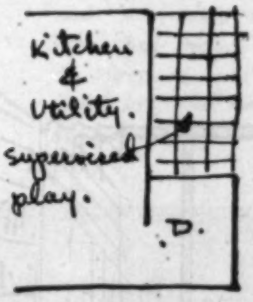

or storage from the other side – (or both)

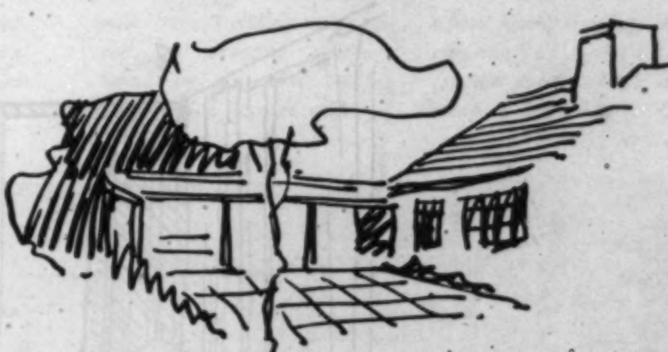
6. *Living Terraces*

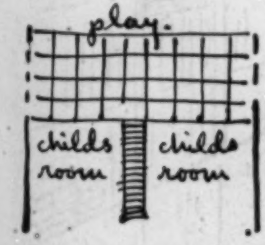
Practically all rooms are enhanced by an adjacent outdoor area, surfaced, protected and landscaped as an outdoor living area. The average climate has enough comfortable weather during the year to warrant the small outlay this use of space requires. Many yards go wasted because they are planned for display instead of for *living*. Also, yards are often ineffectually designed as a separate problem from the house, whereas terraces unite the two both in composition and in use. If there can be several terraces, they can vary in use.

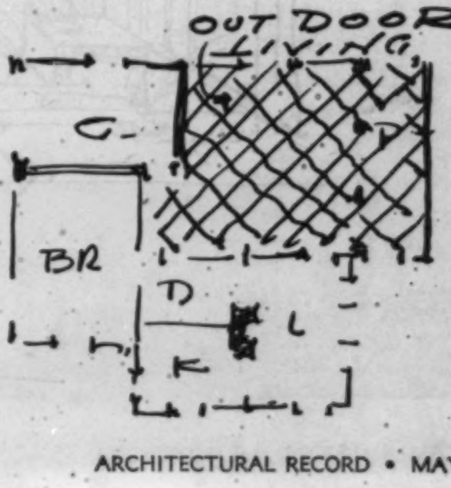

Living
Dining

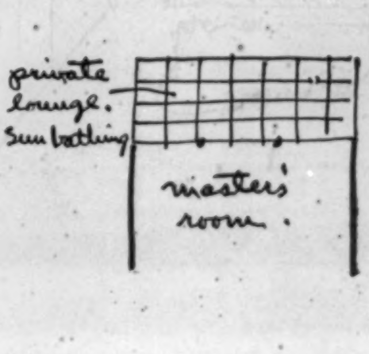



Kitchen & Utility.
supervised play.
D.

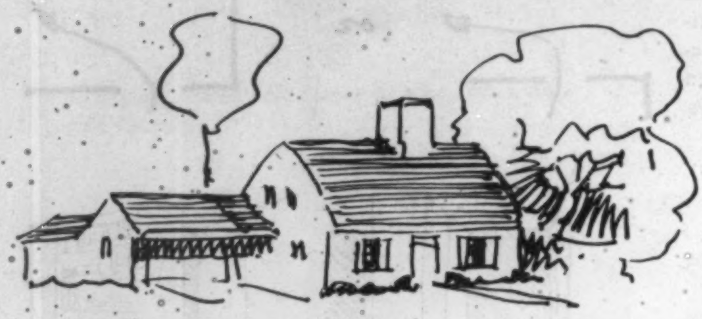


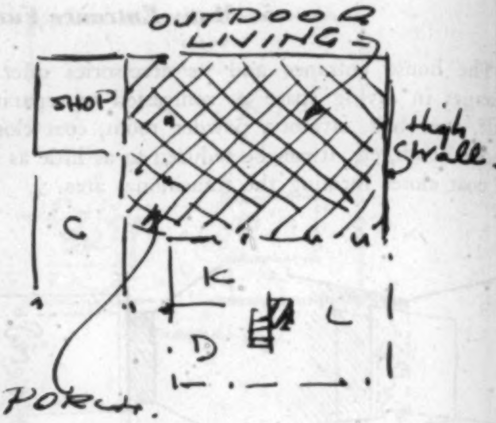

play.
childs room
childs room

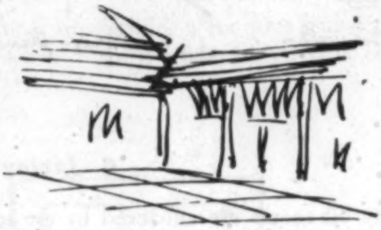

OUT DOOR LIVING.
G.
BR
D
L
K


private lounge.
Sun bathing
master's room.

6. *Living Terraces (Continued)*

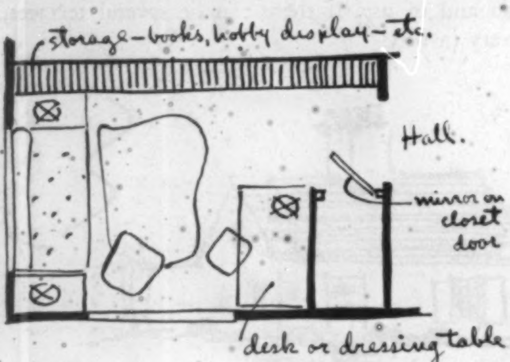



OUTDOOR LIVING
SHOP
High Wall
C
K
D
PORCH.

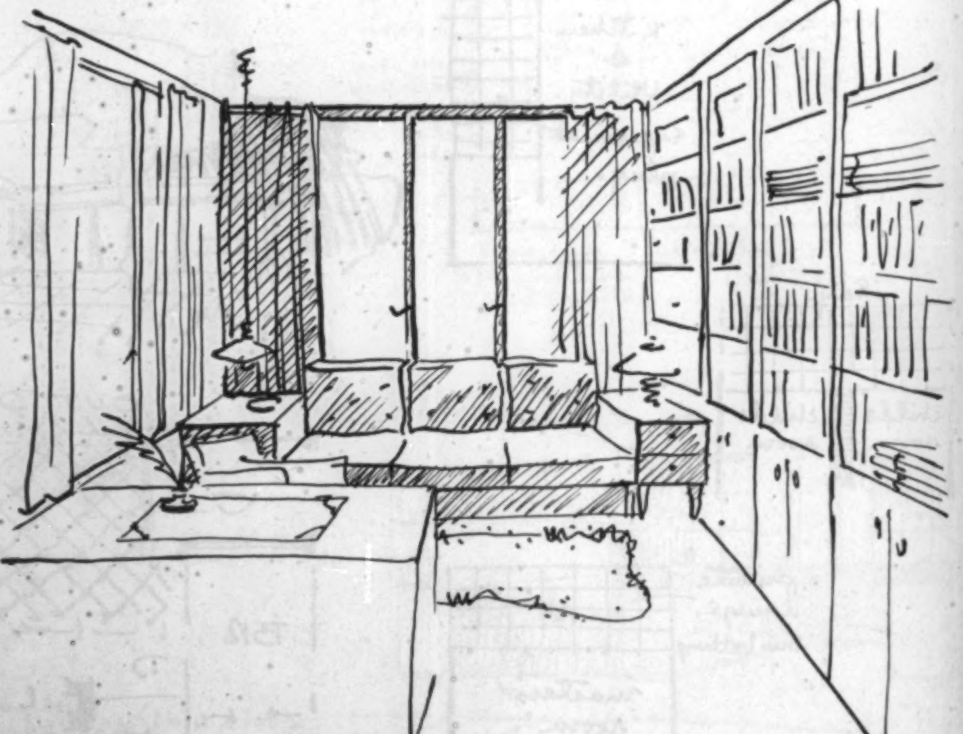


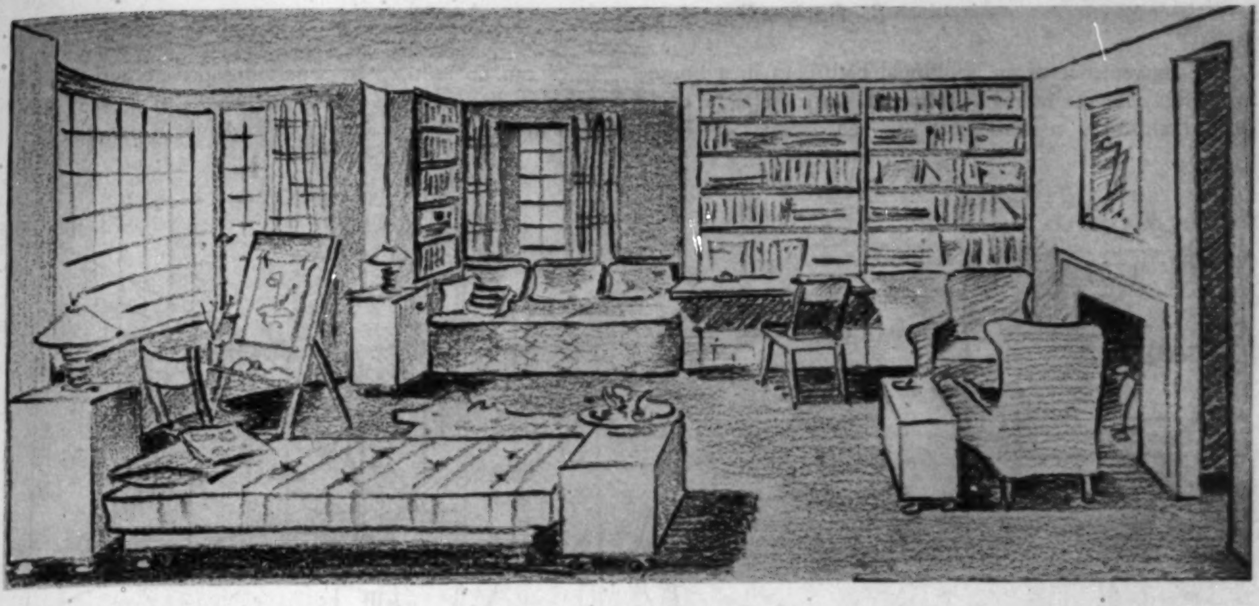
7. *Study—Guest Room*

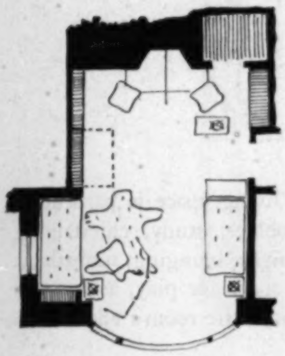
This combination works out to be a splendid dual use of space because the functions are not apt to be required at the same time and because the furnishings needed for the two uses overlap and repeat well (See table).


storage—books, hobby display—etc.
Hall.
mirror on closet door
desk or dressing table

STUDY:	**GUEST ROOM:**
couch	bed
desk/side tables	dressing table, mirror
built-in storage	duplicate
lounge and side chairs	"
lamps	"
closet	"

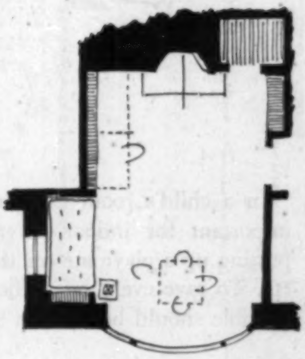






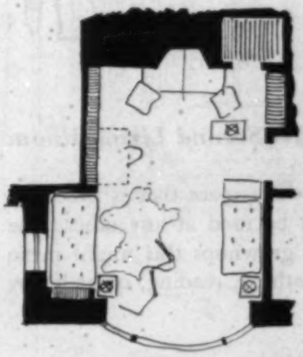
1. Sick-isolation Room.

Screen around patient's bed; couch bed at right for nurse. Flap table for medicines, supplies. Radio by nurse's bed or near the fireplace



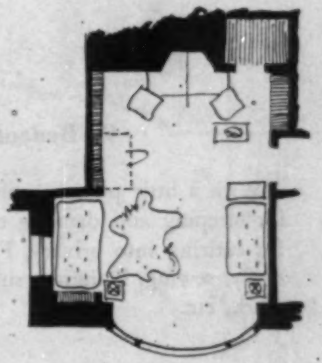
2. Play-Hobby Room.

Games, tea parties, or study at folding table. Other bed moved near the fireplace, screen stored in closet, rug under bed. Displays on wall



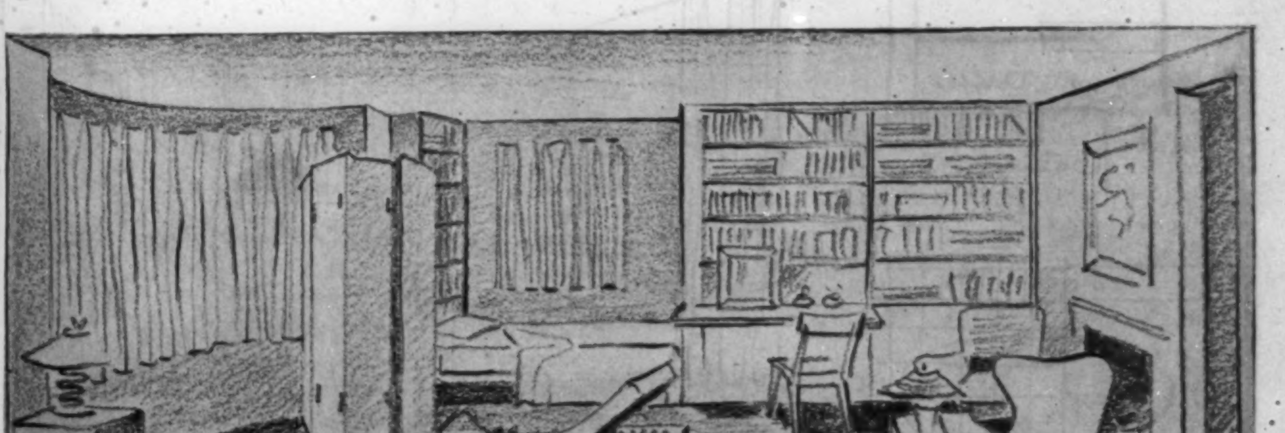
3. Guest Room.

Furniture much as in sick room. Flap table should now have standing mirror for dressing use. Stand by day bed replaced with luggage rack



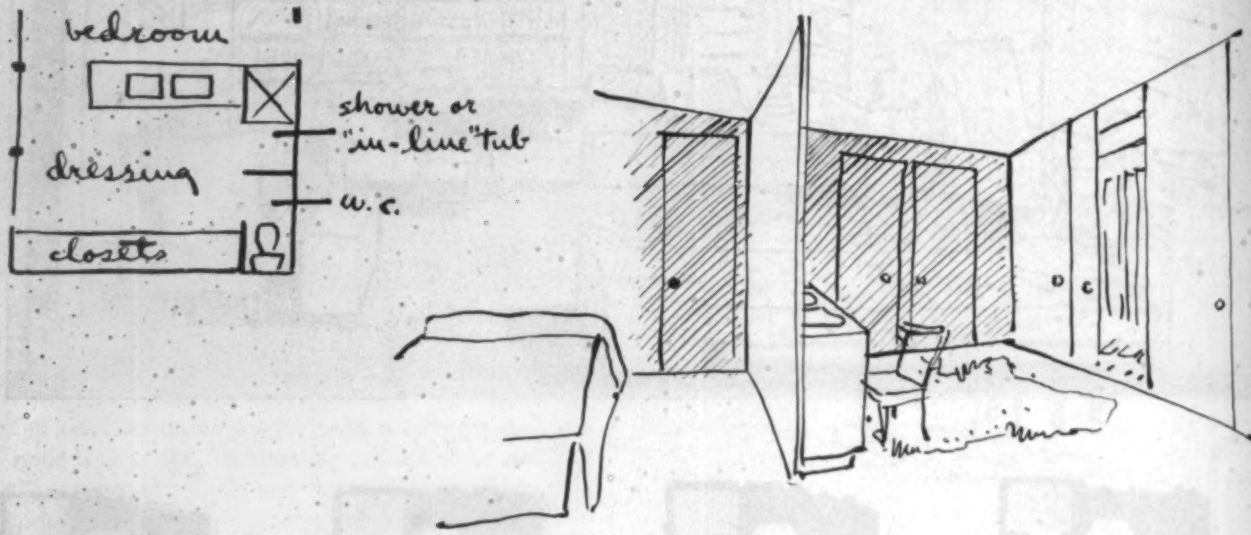
4. Office or Study

Without much change, room becomes study or office. Good lighting for painting at window (sketch above). Desk instead of flap table.



8. Bath—Dressing

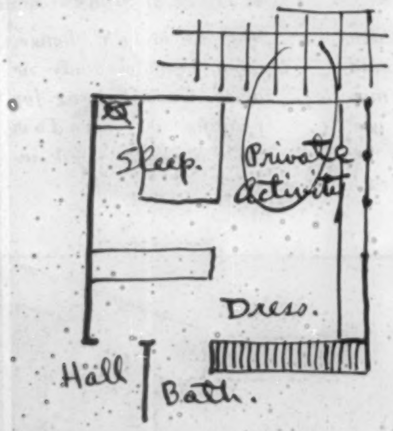
The convenience of an additional bathroom in a house (preferably for the owners' bedroom) has come to be considered almost a requirement. But the actual bathroom space can be reduced by separating private and semi-private functions, incorporating washbowls in dressing tables in a dressing alcove, and W.C. and tub in private closets.

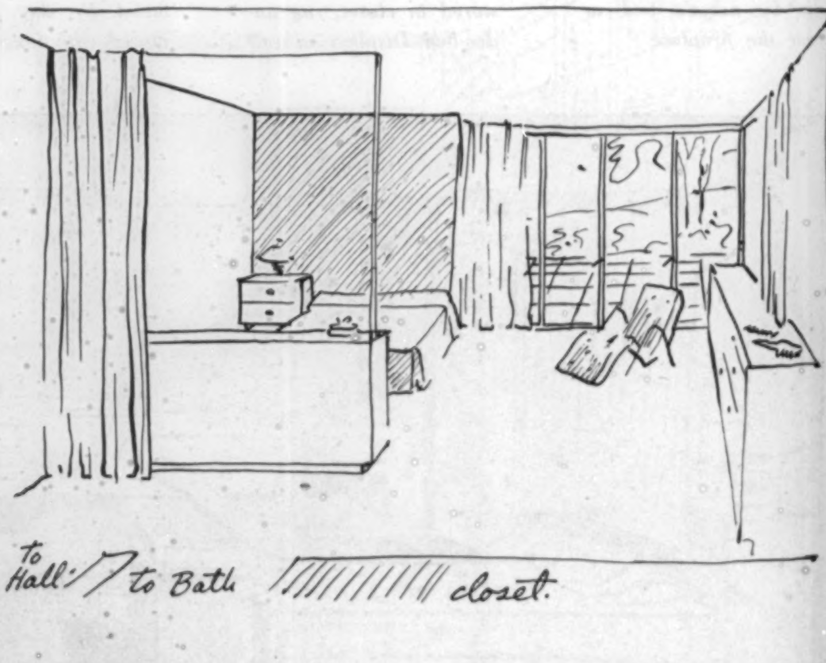

bedroom
shower or "in-line" tub
dressing
w.c.
closets

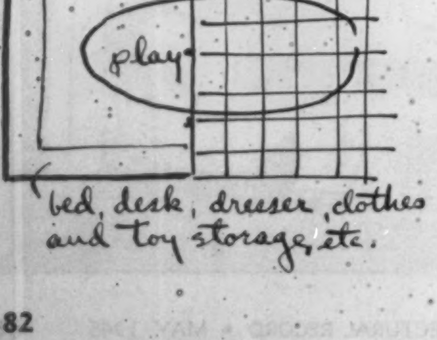
9. Bedroom—Second Living Room

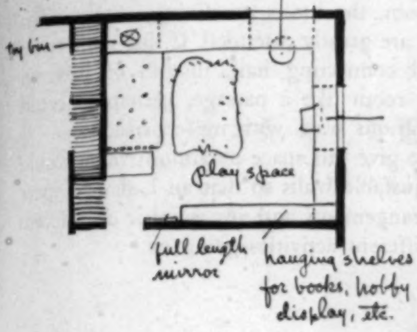
With a little planning, the same space that is necessary for sleeping and dressing can be used at any other time for retiring into privacy. For grownups this might mean study, sewing, lounging, sunbathing, reading, quiet hobby work, etc.

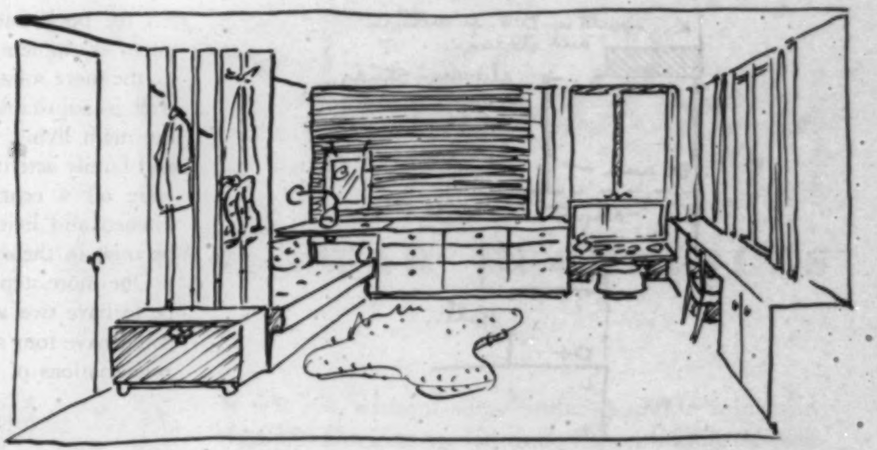
In a child's room the extra living space is particularly important for indoor play, hobbies, study, entertaining, putting up a playmate for the night, lounging, sunbathing, etc. To save every bit of floor space for play, as much as possible should be built in around the room's edge.

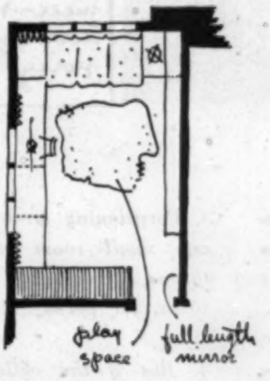

Sleep.
Private activity
Dress.
Hall
Bath.

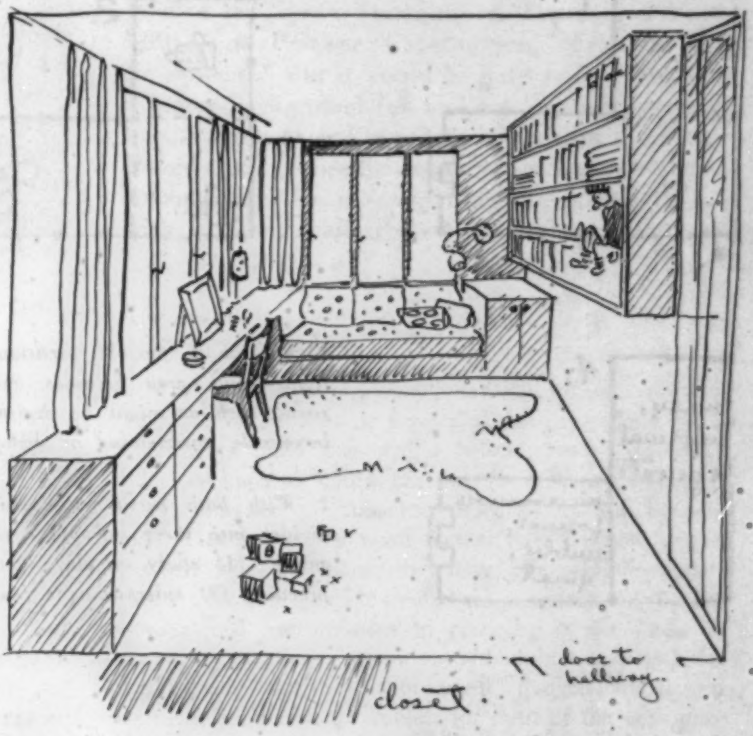

To Hall
to Bath
closet.


play
bed, desk, dresser, clothes and toy storage, etc.



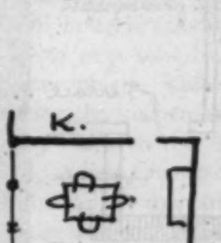


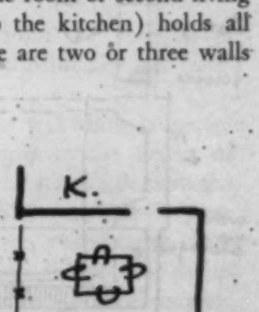


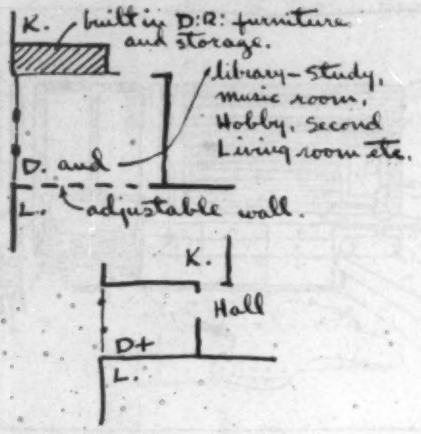


10. Dining—Study, Office, Library, Music Room, Second Living Room, Play

The dining room has become a controversial issue, all because people no longer agree on how and where eating is best done. As the three daily meals take only an hour and a half out of the day, the question is, is a separate room justified for this short time? Of course, it depends upon the agreed-upon manner of eating. For a formal, leisurely life, the distance from the kitchen and the maintenance of a separate room are justified by having a complete stationary setting for dignified dining and entertaining. For an informal family that leads an active pace, "off-the-kitchen" meal service for everyday would be more efficient and informal. However, in the latter, there must be careful allowance for formal service and entertaining when the occasion demands. The present conception of a dining room off the living area is commonly the usual dining room area just minus one wall (which cuts down on storage but doesn't save much space). The only advantages are "openness" and possible extensions for entertaining. But if taken one step further with dining furniture that adjusts itself to other uses, or to storage against the wall, then the same space can have many worthwhile uses: study or library, hobby room, music room or second living room. If one wall (connecting to the kitchen) holds all dining furniture and storage, there are two or three walls

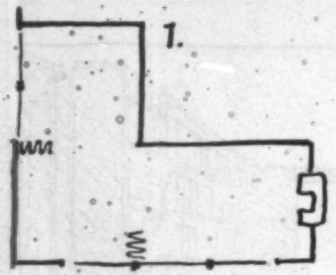


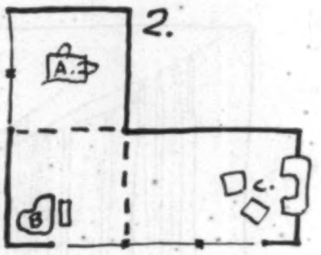


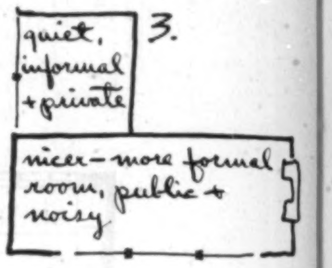

K.
built in D:R: furniture and storage.
library-study, music room, Hobby, Second Living room etc.
D. and
L.
adjustable wall.
K.
Hall
D+
L.

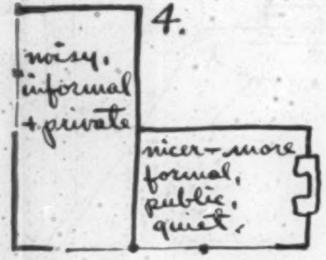
left for book and supplies storage, hobby display, desks, music equipment, etc. In fact the more that there is built-in, the more soundproof this area will become. If the fourth wall is adjustable, so that the space can become part of the main living room, the limits on dining, entertaining, and family activity are greatly extended. If this same space were off a central connecting hall, instead of between kitchen and living room like a passage, perhaps it could be used in these various ways with more privacy.

One more step to give this space maximum value would be to have two adjustable walls so that an L-shaped space could have four arrangements and any number of different combinations of different activities going on.






3.
quiet, informal + private
nicer – more formal room, public + noisy


4.
noisy, informal + private
nicer – more formal, public, quiet.

1. With both flexible partitions open living-dining area becomes one large room, such as might be desirable for large-scale entertaining or games

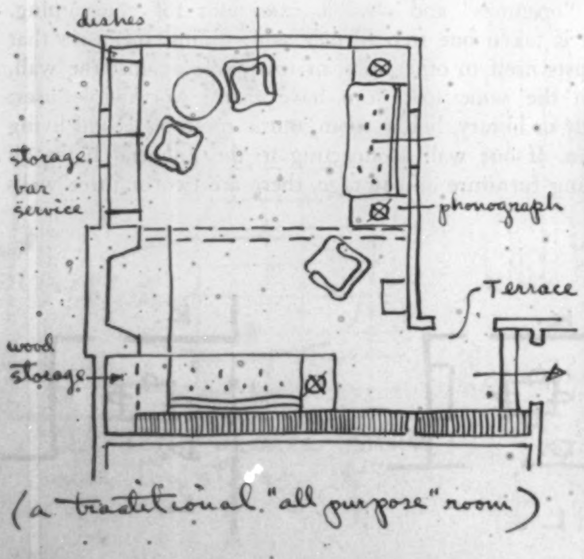
2. With both partitions closed, space divides into three separate rooms. Example: (1) study or play; (2) music practice; (3) entertaining a few guests

3. Partitioning arranged this way gives one small room for quiet activities, throws larger space into a large living room, for perhaps the normal division

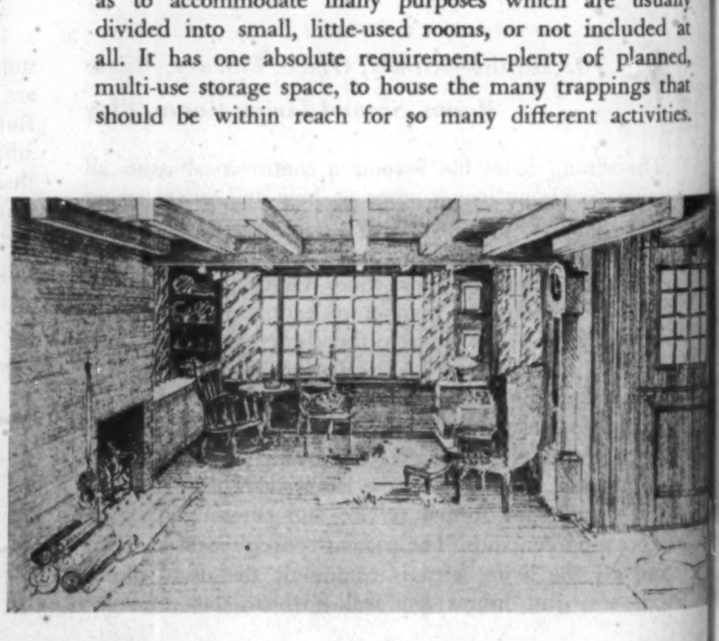
4. But if the children are having a party, the corner space could be thrown the other way, keeping the more formal portion free for something less noisy

11. All-purpose Room—Play, Hobbies, Sick-Isolation Ward, Guest Room, Office-study

Many a medium-size house could be greatly enhanced by one room which is thoroughly planned to be so flexible as to accommodate many purposes which are usually divided into small, little-used rooms, or not included at all. It has one absolute requirement—plenty of planned, multi-use storage space, to house the many trappings that should be within reach for so many different activities.


dishes
storage, bar service
phonograph
Terrace
wood storage

(a traditional "all purpose" room)



Technology

POSSIBILITIES IN POSTWAR TECHNIQUES

Shelbourne Studios

By Robert L. Davison

It was not without some understandable reluctance that Mr. Davison agreed to do this round-up of technical developments. With a researcher's caution he labeled it: "Some Thoughts on Trends and Possibilities in Postwar Construction, Materials and Equipment." But it would be hard to find one with a better background for looking forward: years of heading prewar and wartime research for the Pierce Foundation; before that an editor of ARCHITECTURAL RECORD; now he is researching the postwar house with his own staff, Robert L. Davison Associates

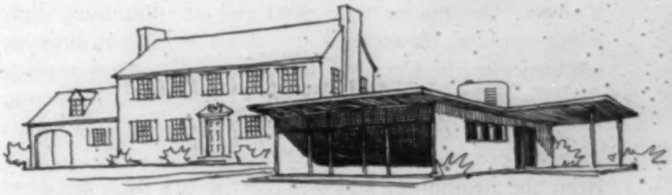
THE "small house" used to be defined in architectural circles as any house costing less than $25,000. I don't know whether that definition is still accepted, but it has become evident in recent years that the $2,500 house has little in common with the $25,000 one. The former is a far more difficult technical problem than the latter, as the architects who have been entering this field in increasing numbers have discovered. The solution of this problem is so vital to the social and economic welfare of the country that it presents both an obligation and a challenge to the best minds of the architectural profession.

The foregoing price distinction has been drawn because it is my opinion that the postwar house costing less than, say, $5,000 will show technical trends that depart markedly from those of the more expensive house. Most of the technical innovations in the field of new materials and new construction methods will be seen in the lowest price class. Only in the field of equipment do I expect the more expensive house to exhibit a more advanced technology.

It is of course fairly evident that no significant technical changes can be expected immediately upon the resumption of house building. Everything will be pretty much as it was except that it will cost a lot more, and some things will not be obtainable right away. It is not this period but the following one, that is the subject of these notes.

I doubt that there will be any *basic* changes in the materials or construction methods used in houses costing over $5,000. Many new materials will undoubtedly be used, but in essentially traditional ways. The trend toward modular standardization of dimension will become a fairly general practice. The long existent trend toward a greater degree of pre-assembly and pre-finish of parts is expected to continue, as is the more recent trend toward the use of large sheet materials, and away from the use of plaster and other wet materials. Light steel frames will probably be popular for the more expensive houses. But it is in the field of mechanical equipment that the greatest technical advances are expected in houses of this price class.

A recent trend that will, I believe, have a profound influence upon all houses that are not custom-designed, is the appearance of "consumer research" in the housing field. Planning based upon factual data on how people live and what possessions they have, will result in houses that are far more livable than those prevalent today. This fundamental improvement in planning is not likely to attract much popular attention, although it may save far more labor than the "labor-saving" gadgets which will continue to furnish the subject for most of the sales publicity. With planning thus freed from the shackles of tradition, I expect that houses will also become less traditional in architectural style.



The $25,000 house vs. $2,500 house—a different problem
Illustrations by Malcolm Duncan

Most new suburban developments will show some influence of the Radburn plan, if only to the extent of placing the kitchen and garage on the street side, and the living room on the "rear." In the $5,000-and-under price class, where reduced frontages are necessitated, row houses will be increasingly used despite the popular prejudice against them that exists in many parts of the country.

Houses costing less than $5,000 will, I believe, make up the largest part (in dollar value) of postwar dwelling construction. It is in this field that most of the technical advances in materials and construction will take place. Large scale development, 500 units and up, will be general, and developments of less than 100 units will be rare. Prefabrication in some form will be almost universal in this field. Prefabrication on the site, as practiced on several of the war housing projects, will probably be employed on some of the larger postwar developments. But I think that most of the prefabrication will be done in permanent plants. In addition to those companies already established in this field, many new ones will undoubtedly appear, often making use of surplus war plants.

Probably the jig-table type of prefabrication will continue to predominate for some years to come, although much improved production-wise by the extensive use of conveyor assembly lines and other technics of mass-production industry. The basic product of this type of prefabrication will be the stressed-skin panel, consisting of two large pieces of sheet material adhered to either side of a light wood frame, with insulation filling the space between. Many plants will go one step further and assemble three-dimensional sections of houses, in which equipment and furnishings are installed at the plant. I believe, however, that the large cubage of empty space that must be handled, warehoused and transported will eventually prove this type of construction uneconomical.

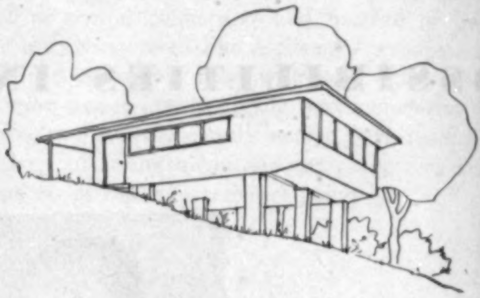
But none of the above will represent the most advanced technology of the postwar period. This latter is foreshadowed by the extremely significant announcement recently of the formation of Dymaxion Dwelling Machines, Inc. This new company brings the entire production facilities—materials, methods, plant, machinery and personnel—of a major aircraft factory into the house manufacturing field, along with Buckminster Fuller's well-known designs, and an A.F. of L. union labor tie-up. The latter factor is not a technical one, of course, but is of great importance as an indication that organized labor may become a major force in support of technological advances in the construction field, instead of opposing them as many of the building trades unions have done in the past. The adaptation of aircraft materials and light construction technics to the design and production of dwellings is the most promising thing that I see on the postwar horizon. The houses thus produced of aluminum, light alloys, molded plywood, and plastics, will bear little resemblance to the Cape Cod cottage which was the typical prewar small house. Not only in materials and construction will this be true but also in basic design. I believe that the postwar low-cost house will be designed as such from the beginning, and will not be merely a cut-down and cheapened version of a $10,000 house.

Postwar trends and possibilities for various parts of the dwelling are summarized briefly below. These are only my own opinions, of course—sometimes merely hunches.

Foundations, Floors and Basements

The general trend will be to reduce excavation to the absolute minimum. I believe that most low-cost postwar houses will rest on piers, since that type of foundation requires the least excavation and site construction. This will make possible the use of steeply sloping, irregular and rocky sites that were formerly considered unfit for house construction. On relatively level sites, the space underneath the floor will be sealed off to help insulate the floor. But on sharply sloping sites, the space will be left open and the floor will carry its own insulation. I expect prefabricated piers to be generally available.

Requiring almost as little excavation, but far more site construction, is a floor slab laid directly on the ground. When made of concrete, it must be fairly heavily reinforced against frost action, and well insulated against moisture and cold. By the time all of this is done most of the advantages of the slab idea have been lost. A more satisfactory type of slab floor will probably be used, made of a low-heat-capacity filler with a bituminous binder. Such a material would be inherently waterproof, warm to the touch, and soft to walk on. This material is not brittle and would not crack under frost action; however, to prevent the entire structure from being thrown out of plumb by frost heave, the slab could be extended out a foot or two beyond the outside walls. This type of construction is not capable of carrying heavy wall loads without special reinforcement, but is well suited to a very light type of construction, such as may result from conversions of the aircraft industry to house production.



Pier foundations for sloping sites

Continuous foundations below frost line will continue to be used for the more expensive houses, largely because they are traditional. There will usually be a full basement, and for the same reason. Tradition will be about the only justification for the basements that will be built in the postwar period, since none of the reasons that originally caused them to be built are any longer valid. All of the functions formerly performed in the basement can be better and more economically done above ground.

Houses on stilts in the Corbusier and tropical tradition will not be widely used. However, some increased use is expected in urban row housing where land is scarce, and also for occasional special purposes, such as obtaining a view over nearby obstructions.

Structure

The general trend for the low-cost house will be toward a light, highly engineered structure, utilizing modern materials to near their maximum strength. The engineering trend is in the direction of light alloy compression members, with thin sheet materials taking the tension and furnishing bracing to the supports; the sheet materials themselves are stiffened by being curved, bent or warped. However, this engineering trend toward a closely knit organic structure, in which wall, roof and floor are all integral parts, runs counter to what appears to be a strong architectural trend toward flexible walls and many large openings. It is my guess that the engineered organic structure will predominate in the lowest price class, and the "free wall" type in the somewhat more expensive group.

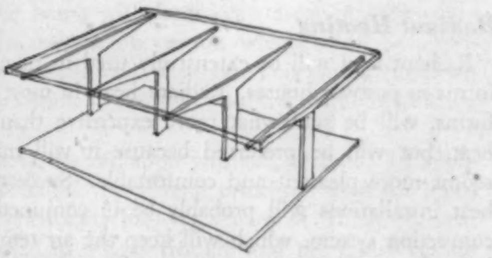
Two types of structural system permit freedom in the disposition of the outside walls, and both will be used.

One is the "skyscraper frame" of widely spaced supports; the curtain walls can be placed in line with the supports, or inside or outside of this line, or omitted entirely. This type of construction is ideally suited to pier foundations. The other type is the cantilever system where the roof is cantilevered out on both sides (or all sides) of a central core. If the roof construction is kept very light, so that only a light truss is required, this type of structure is quite feasible even for the lowest-cost house.

Continuous bearing walls, which have hitherto predominated in house construction, are expected to be less used in postwar houses, especially in the lowest price group.

Floor systems, unlike wall systems (where walls are tending to become separate from the structure members) are likely to be of the stressed-skin long-span panel type, with finish floor and ceiling installed at the factory.

Roof systems may be the same as floors, or may be trussed or arched. The trend toward movable partitions and open planning favors a roof construction free from interior supports. Light prefabricated trusses are an obvious and practical solution. More advanced technically is the sprung arch truss, which permits the use of thin sheet material for covering since it is curved. One company (Ratio Structures) has recently demonstrated that even the true arch, built of big panels instead of the traditional small stones, is practical for small houses.

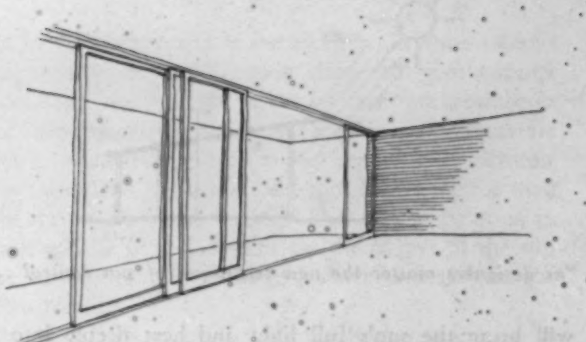


"where the roof is cantilevered out on both sides . . ."

Fixed frame bents or three-hinged arches will be considerably used in spite of their being rather awkward to transport. Laminated wood and light alloy metal will be the two principal types.

Walls, Windows and Doors

I expect that the panel type of wall, built on a jig table as described above will gradually give way to a type of wall that can be produced in endless length by automatic machinery. The hollow panel type of wall evolved without much critical thought, by simply building a section of a conventional stud wall in the factory. Analysis of the function of a wall shows that, other than supporting the roof, its purpose is primarily to supply protection from the weather, indicates that insulation of the required thickness, waterproofed and finished on both sides, is all that is needed to make a wall, if the roof is supported independently. In general this will mean a light weight material about two inches thick with a tough, impervious skin on both faces. The skin may be integral with the core material (as in Rubatex) or it may be a separate material applied to the core (as in Cemesto). The former is perhaps theoretically better, but the latter offers more opportunity of producing a wall to any desired specification. I believe that this type of material will be made in various degrees of insulation, fire resistance, and durability, and in a wide variety of colors, textures, and finishes and will be used not only for small houses, but for apartments, stores, schools and factories.



"the trend toward larger wall areas of glass . . ."

Surfacing materials for such a sandwich-type wall are likely to be plastic impregnated paper or veneer, plastic reinforced with fiber or textile, aluminum, plywood, or asbestos-cement. Core materials may be any of the fiber insulating boards, although I believe that an inorganic material will be developed that will be more satisfactory for this purpose. Glass, clay, cement, gypsum and plastics can all be made in light cellular form; blast-furnace slag, diatomaceous earth, Microporite, and mineral wool board are other examples. The ideal core material will be waterproof and vaporproof (like Rubatex and Foam Glass) and will therefore eliminate the troublesome problem of internal condensation. The core and surfacing eventually used will probably be materials specially developed for the purpose, and not yet in existence.

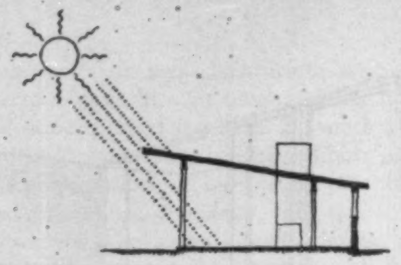
I believe that the trend toward larger wall areas of glass (or other transparent plastics) will continue, whether fixed or in the form of windows and doors. Glass block, being a handicraft material, probably will be used most in the more expensive houses. Factory sealed double and triple glazing (Thermopane) will be extensively used. Houses with complete year-around air conditioning will probably have all fixed glass, especially houses in the cities. Otherwise the trend toward intimate relationship between indoors and outdoors will cause windows to become more like doors. Both windows and doors will open clear over wide areas, leaving no mullions or other obstructions. Accordion-type or horizontally sliding sash or doors will accomplish this purpose; the overhead garage-type door may be also used, even on the second floor. Windows of transparent plastic that can be rolled up like window shades are an attractive possibility.

The trends mentioned above toward extreme flexibility in interior partitions, and to a less extent, in exterior walls, will cause a number of houses to be built in a modern version of the Japanese sliding-screen style. The panels will slide easily into closets provided for them, and the exterior glass panels can be replaced or covered with solid insulated panels, according to the hour, the weather or the season.

Sunlight and Sun Heat

Perhaps this is as good a place as any other to introduce this subject, which is not exactly part of a house, to be sure, but will most certainly play an important role in all postwar house construction.

The trend toward extensive glass areas and large openings will continue and gain in strength, I believe, a designers master the new technic of sun-control. They



"as designers master the new technique of sun control . ."

will bring the sun's full light and heat deeply into the house at times when they are wanted and will exclude either or both of them when they are not wanted. Most of this will be done automatically for the householder by the design and orientation of the house. Equipment for making temporary adjustments will be so designed that it will be easy for anyone to operate. Sun-control will cut heating and cooling costs and make the house more pleasant and livable at all times.

Said thus, in a sentence or two, it may sound easy, but consider some of the factors which must be considered by the sun-conscious designer: as preliminary data he must know the local longitude and weather bureau statistics, the time-use pattern for the family who will occupy the house (i.e., what rooms will be used at what hours, summer and winter) and the location and height of nearby buildings, trees and other obstructions; his design must include sun-shades inside and outside of the house, both adjustable and fixed, including trees and vines; for this work he should be adept in the use of the heliodon. Finally he must consider the sun's heat in the design of the heating and cooling system and the sun's light in design of the electric lighting system; and the sun will be a factor in his selection of materials and finishes for walls, floors, ceilings and roofs, as well as windows. Extensive research is needed in this field to supply the basic data, develop working formulae, and establish standards, all in a form which will be convenient for the use of designers.

I believe that a low-cost glass or other plastic transparent to ultra-violet, will be extensively used in houses. A glass or plastic opaque to infra-red, may be used in the summer, in addition to, or in place of, "winter glass."

The roof-coils that have long been used in Florida and other sub-tropical areas for heating domestic water supplies, will not prove practical, in my opinion, for house heating in more northern sections. Unless some more satisfactory method of storing the sun's heat is developed, and it is quite possible that it will be, it will probably be more practical to use the sun's heat directly when the sun is shining, and at other times to utilize nature's highly efficient forms of stored sun-heat (wood, coal, oil, gas).

Roofs

I believe that both flat and pitched roofs will be common for postwar houses. Pitched roofs will include not only the common gable type, but also shed roofs, and curved roofs; one thing they will all have in common is low pitch. Attics will be used only for insulation and dead storage. Some expensive traditional houses will continue to have steep roofs and dormers, but in the lowest price houses, such things will be unknown.

A flat roof is not always cheaper than a pitched roof; it depends upon the span, the materials, and the interior plan. Flat roofs when they are used will be used from preference, either stylistic or functional. In the latter connection, I do not foresee any very large scale use of the roof as a terrace except where land is scarce. On a small lot, the gain of an additional 600-700 sq. ft. of usable outdoor space at relatively little cost, is definitely a good bargain. Incidentally, prefabricated roof slabs will be developed that have waterproof joints and require no additional roofing materials.

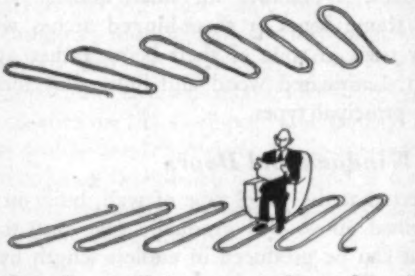
Interior Finishes

Plastics will be extensively used in postwar houses, but needless to say, will not produce the miracles that have been so glowingly described by the Sunday feature writers. Plastics will of course continue to be used for all kinds of small gadgets, and probably for piping. But their most important use, in my opinion, will be in wall, floor and roof materials, where plastics will serve as adhesives, impregnants, binders, aerated insulating cores, and finishes. Easily cleaned, warm to the touch, and endlessly varied in color and texture, plastics are ideally suited as interior finishes. Doors and windows and their frames, if not made of solid plastic, will at least be finished in plastic.

I believe that a new plastic will furnish the answer to the long-sought low-cost floor that will be resilient but tough.

Radiant Heating

Radiant heat will be extensively used in many different forms in postwar houses. Radiant heat, in most but not all forms, will be somewhat more expensive than convected heat, but will be preferred because it will make heated rooms more pleasant and comfortable. Successful radiant heat installations will probably be in conjunction with a convection system, which will keep the air temperature at a minimum of about 50° F. At that temperature, an inactive person may be uncomfortably cool in the shaded portions of his body, while being pleasantly toasted on the portions exposed to the heat.



"radiant heat will be extensively used . . ."

Currently in this country "radiant heating" most often means hot water coils buried in a concrete floor slab. This method fits in nicely with the trend toward basementless houses, and has the great advantage of completely eliminating the cold floor which has been such a problem in most other methods of heating. But it has several obvious disadvantages: a concrete floor is not comfortable to walk on, and any rugs or other floor coverings used will interrupt the heat. Heat supplied through the floor has a definite upper limit, and hot feet are just as uncomfortable as cold feet. The entire slab must be heated up before it becomes an effective heat source; the resulting slow pick-up is a limiting factor in the use of this method. In spite of these disadvantages, I believe that this method will be used to a considerable extent in postwar houses, particularly the more expensive ones.

The British, who first developed "panel heating," as they called it, installed pipe coils buried in the plaster of the walls or ceilings or both. Since the walls are likely to be cut up by openings and obstructed by furniture, the ceiling soon became the preferred location. This method does not entirely eliminate stratification and cold feet, but is otherwise preferable to the heated floor type. A variation of this method which is better adapted to prefabricated construction, consists of a ceiling made of a thin sheet of metal, to the back of which the heating pipes are welded. This method would have the further advantage of quick pick-up.

A less expensive and probably the most used type of radiant heat will be that employing hot air to heat the floors, walls, or ceilings. In conventional construction for example, a single pipe can be run through the studs all around a room just above the floor, thereby heating the air spaces between the studs and warming the plaster walls.

An entirely different type of radiant heating may be developed, consisting of electrically heated wires applied to the walls or ceilings, perhaps in the form of wallpaper. This would be somewhat similar to the electric blankets of prewar days and the wartime electrically heated clothing for fliers. This type of heating might be of particular value to the postwar house with large glass areas, since it could be used as an open mesh curtain which could be pulled across the openings in cold weather. This would cut down the loss by radiation to the cold window, without shutting out light or view.

High temperature radiation will also be used. In application, it will follow the general principles used for lighting. Probably a totally indirect system in which the heat source is carried in a cove trough, and the entire ceiling acts as a reflector, will be the most successful. This type of heating has the advantage of being almost instantaneous, and could be turned on like the light when one enters the room and turned off when one leaves. Heat reflective finishes would be required on the ceiling and desirable on the walls and floors. Such finishes need not be light reflecting.

Lowest-cost postwar houses will probably be heated by some modification of the highly efficient heaters developed recently for airplanes. One such heater only 9 in. in diameter and about 2 ft. long has two or three times the heat output required for the average five-room house. About the same size, but coal-burning, is the new fully-automatic heater developed by Anthracite Industries, Inc. Small heaters of this type, plus electric heat lamps for local radiant heat, will be the typical heating system used for houses of this class.

Air Conditioning

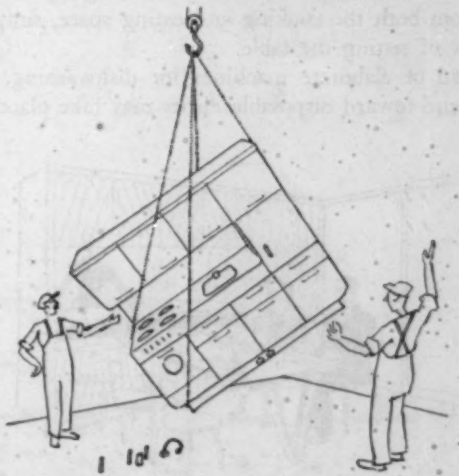
Although much attention has been given here to radiant heating, the accepted standard for all but the lowest cost postwar house heating will probably be "air-conditioning." Air will be filtered or electro-precipitated, sterilized, heated, humidified, and delivered by forced circulation through ducts. In the more expensive houses, the air will be delivered at about 65° F. and radiant heating will make up the difference.

When the average person declares that he wants "air-conditioning" in his home after the war, he almost invariably means that he wants complete summer cooling equipment. Despite this fact, I doubt that postwar small houses will be generally equipped with air-refrigeration except in the hotter parts of the country. In some sections of the country, dehumidification alone will give summer comfort, and this will be done by moisture absorbents rather than by refrigeration. Where local conditions are favorable, water will be used to cool the air, cool night air will be taken into the house, and roof sprays will be used to cool the roof by evaporation. The large glass areas in the wall will be protected from the direct rays of the sun by the various devices mentioned above under "Sunlight and Sun Heat".

A basically new system of air conditioning, known as "reverse cycle refrigeration," may very possibly be developed in a form suitable for the postwar small house. This system extracts heat from the air and circulates the cooled air in the summer time; in the winter the cold air is discarded and the extracted heat is used for house heating.

Lighting

Instant-starting fluorescent tubes of variable intensity will be the standard light source for postwar houses of all price classes, and will be used for both installed and portable lighting. The trend will continue toward built-in lighting, with fewer exposed fixtures in the old sense of the word. Over-all illumination will be high and distribution even, so that local and portable lighting will be rarely needed. The reading lamp will begin the long journey that will eventually end in the antique shop. Typical installations will use diffusing glass or plastic in front of the tubes, to increase the area of the light source and decrease the contrast between those areas and the other surfaces of the room. Cove-type indirect lighting will also be used, supplemented by some direct lighting, to correct the depressing shadowless quality of totally indirect lighting. Perhaps ceilings will be coated with a fluorescent material which will be activated by a few mercury vapor lamps, concealed in the coves. Or a suspended ceiling of glass or plastic similarly coated might be activated from above.



"complete kitchen equipment units . . . will be available . . ."

Kitchens

The trend of the last twenty years toward smaller, more efficient kitchens was almost entirely an apartment movement and had little influence on small house design. Perhaps this is just as well, because I believe that the postwar trend will be toward large, comfortable, attractive kitchens, with large glass areas and perhaps an easy chair. The layout may be slightly less efficient than the best prewar apartment kitchens, but will make a far more comfortable and pleasant place to work. Circular work space will continue to be the guiding principle for kitchen planning.

Complete kitchen equipment units in a wide variety of sizes and arrangements will be generally available. These units may, of course, be delivered in several sections rather than in one piece, but they will be designed and sold as one unit with one mark-up, and the labor required for installation is reduced to a minimum.

Refrigerators will be wide and shallow, with several isolated compartments for various conditions, and of large capacity. An alternative design may also be used, a deep cabinet with drawers. Small-scale storage of frozen foods will be provided in the refrigerator.

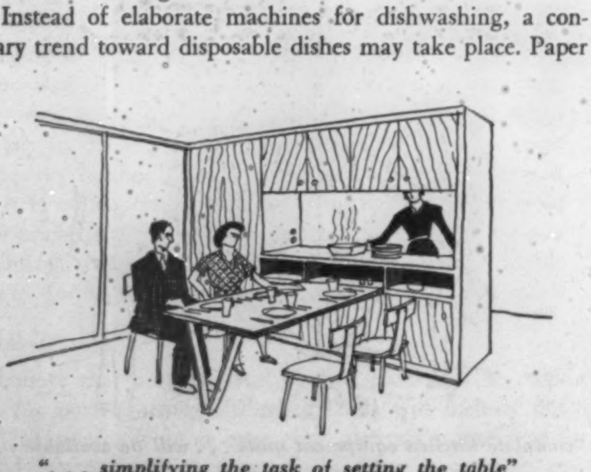
Stoves will continue to be both gas and electric and in addition to the usual hot plates, oven and boiler, will provide a grilling surface and one or more well cookers. Possibly equipment for cooking by electro-magnetic induction will be available soon after the war; this method spills no excess heat into the kitchen, a great advantage in hot weather.

Both the stove and refrigerator, when they cease to be individual items of equipment and become part of a kitchen equipment unit, will probably be broken up into their functional parts and placed wherever required by the over-all design. There is, for example, no particular reason why the oven and broiler should be directly below the cooking top, nor the hot plates all bunched together inconveniently.

A hood and exhaust fan will be a standard part of the equipment unit.

A dishwasher combined with a garbage disposal unit will be developed suitable for use in the more expensive houses. Dishes, glasses, silver and pots and pans will be placed in it without scraping and the procedure will be automatic from there on to the resulting sterilized and dried dishes. Dish storage will be radically revised, so that trays from the dishwasher can simply be slipped into racks without rehandling the dishes. This storage will be accessible from both the cooking and eating space, simplifying the task of setting the table.

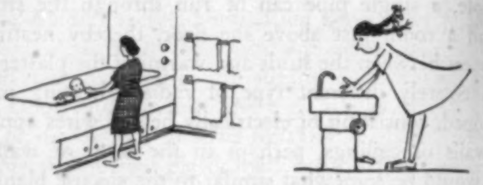
Instead of elaborate machines for dishwashing, a contrary trend toward disposable dishes may take place. Paper dishes and cups may be developed which will not disintegrate under hot liquids. Aluminum foil pot liners may eliminate the arduous and unpleasant task of washing pots and pans.


". . . simplifying the task of setting the table"

Storage space will be larger than in prewar kitchens. Swinging doors on upper storage cabinets will give way to less hazardous types, probably vertically sliding. There will be provision for sitting down while working, which will require adequate knee space below the work top. Large-scale storage of provisions, including frozen foods, will not be in the kitchen, but elsewhere in the house.

Eating will normally be done in a space provided either in or almost in the kitchen. If outside the kitchen, pass cupboards will be extensively used. The traditional dining room will be retained by traditional-minded families who can afford it, especially if they have servants. But in the majority of postwar small houses, there will be no separate dining room.

The prewar trend toward outdoor eating and outdoor cooking will continue, and elaborate portable cooking units, as well as service and storage units, will be developed.


"bathroom fixtures may be adjustable in height . . ."

Bathrooms

The small three-fixture bathroom will remain the standard. It will be prefabricated and sold as a unit, in most cases an equipment unit only, but some complete rooms will also be marketed. Since bathrooms do not need outside light, but do need positive ventilation, I expect most of these equipment units will be provided with an exhaust fan.

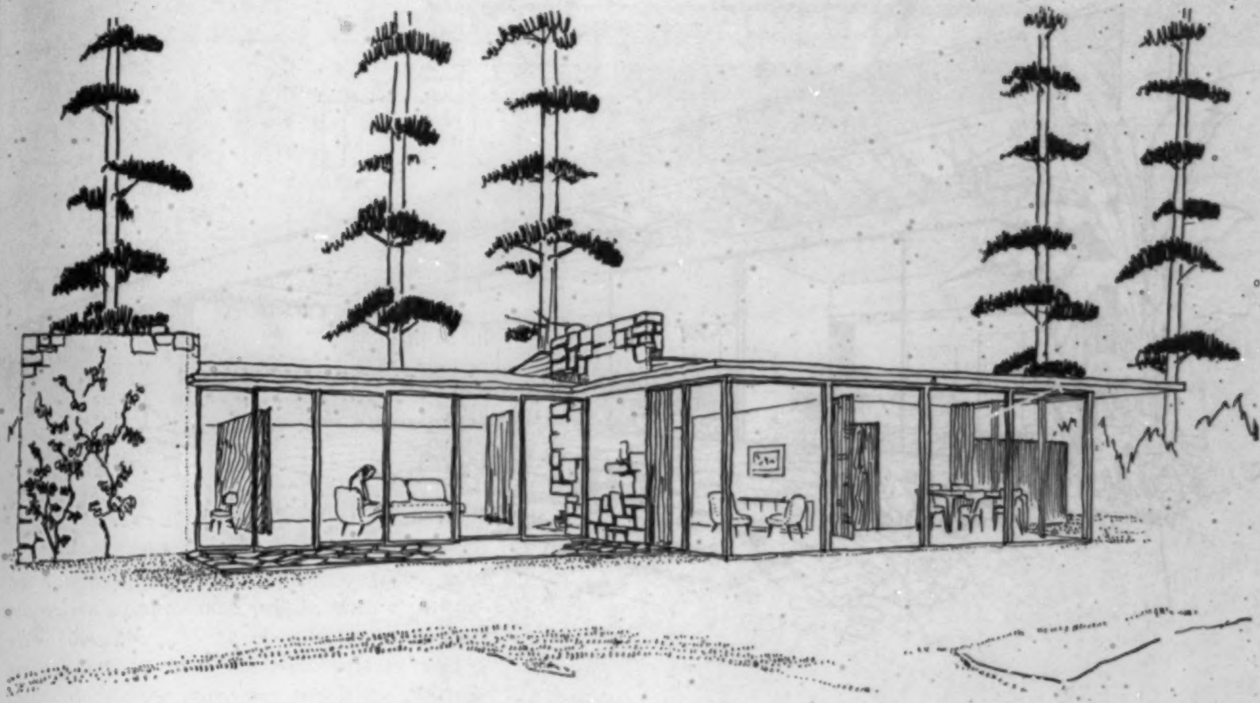
Bathroom fixtures may be made of plastic, which would be lighter in weight, warmer to the touch, and not quite so likely to cause a dropped medicine bottle to break. A separate dental lavatory will be provided. Ample storage for clean towels, soap, toilet paper and other such things will be provided within the bathroom. One or more heat lamps will be provided, for auxiliary radiant heat.

The shower will gain in popularity but will not supplant the tub. Most families will want both, separate if they can afford it, otherwise combined. In either case, showers will have solid doors, non-slip floors and special ventilation. They will have enough room within the enclosure so that the bather can step out from under the water while soaping.

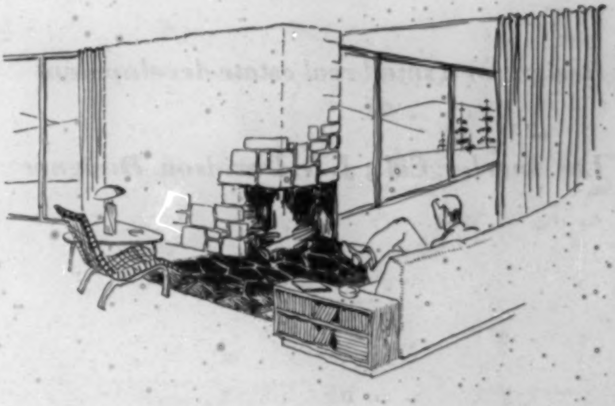
I believe that some enterprising manufacturer will offer bathroom units with the fixtures adjustable in height. Flexible plumbing connections are perfectly feasible. The lavatory could then be raised to a comfortable height for use in a standing position, lowered for use in a seated position and lowered still more for a child. The bathtub could be raised for cleaning, or for bathing a child, and lowered for taking a bath. The toilet could be raised for masculine use, or lowered for use by a child.

Utility Room

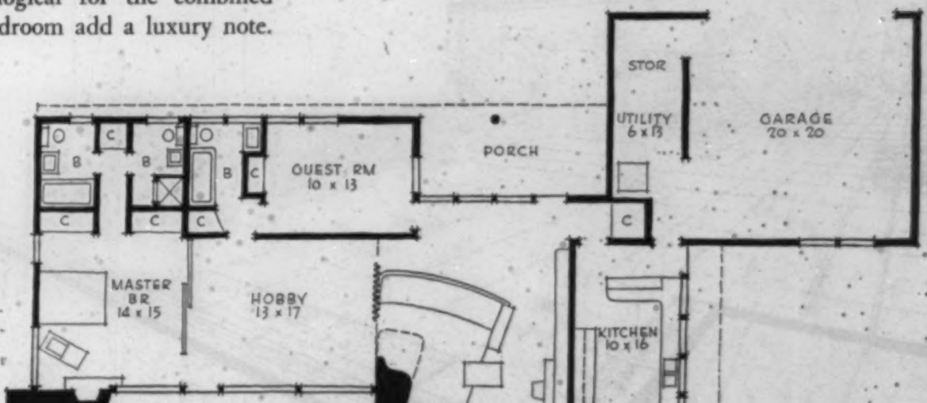
The laundry will be done in a separate room on the ground floor. It will probably be adjacent to the kitchen, so that the plumbing may be combined. Equipment units will be marketed, in which the kitchen equipment is backed up by the laundry, house heating, and water heating equipment. Thus in a single unit, all mechanical equipment for the house, except the bathroom, would be supplied.



A HOBBY SPACE FOR MULTIPLE USE



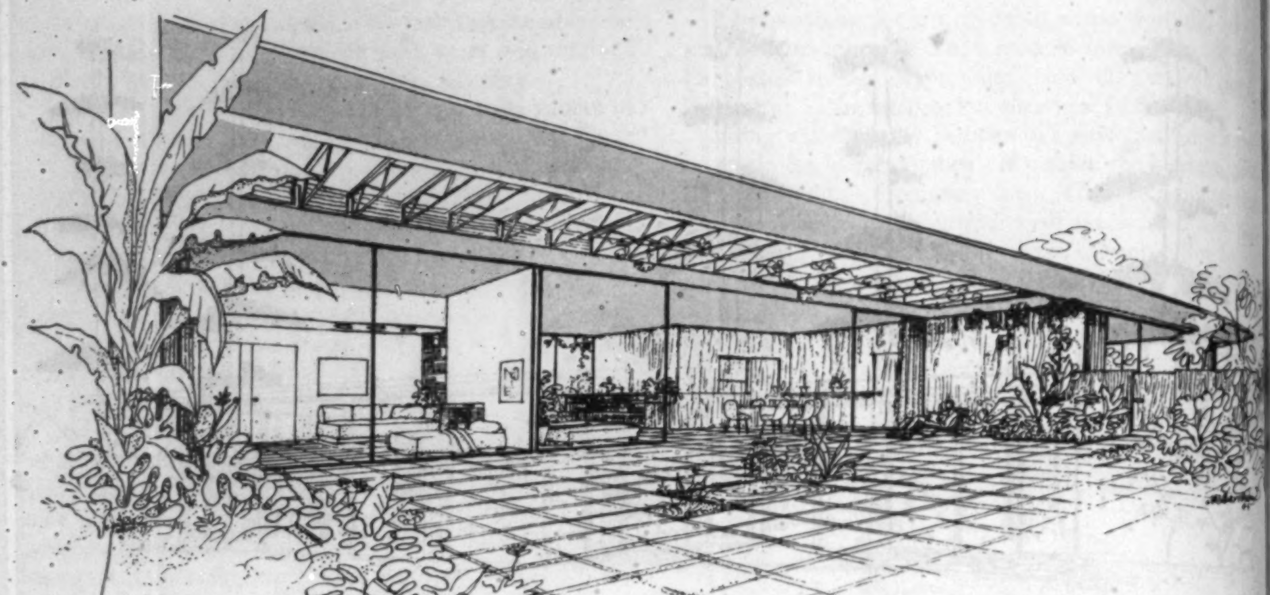
Flexibility of space, a planning principle much heralded for the postwar house, is here carried out in a very logical way. Dining, living, hobby and master bedroom can all be thrown together, should a large open area be desirable; or each room can be isolated. The hobby room, in its location, seems to have particularly interesting possibilities for multiple use. Joined with master bedroom it makes a private suite. If cluttered with hobby activities or props, it can be shut off. Or, it can be a games room, study, or secondary living room, or what not, as occasion demands. The unusual fire place grouping is logical for the combined areas. Two baths for master bedroom add a luxury note.


STOR
UTILITY 6 x 13
GARAGE 20 x 20
PORCH
B
C
GUEST RM 10 x 13
MASTER BR 14 x 15
HOBBY 13 x 17
KITCHEN 10 x 16
TERRACE
LIVING 16 x 30
DINING 10 x 10
0
5
10
15

Postwar House for

Mr. and Mrs. L. E. Badmington, Newport, N. H.,

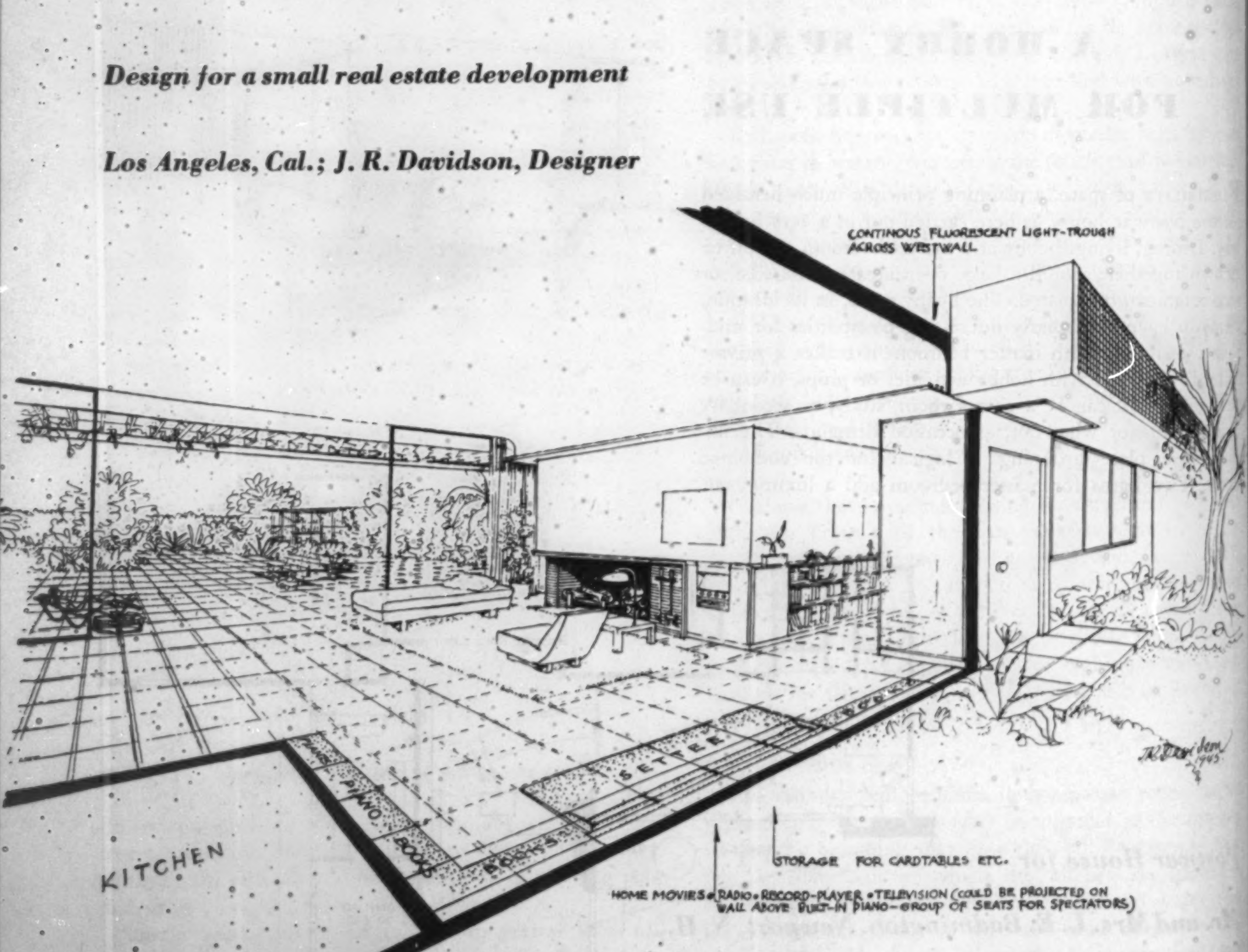
Plan-Tech Associates, Architects

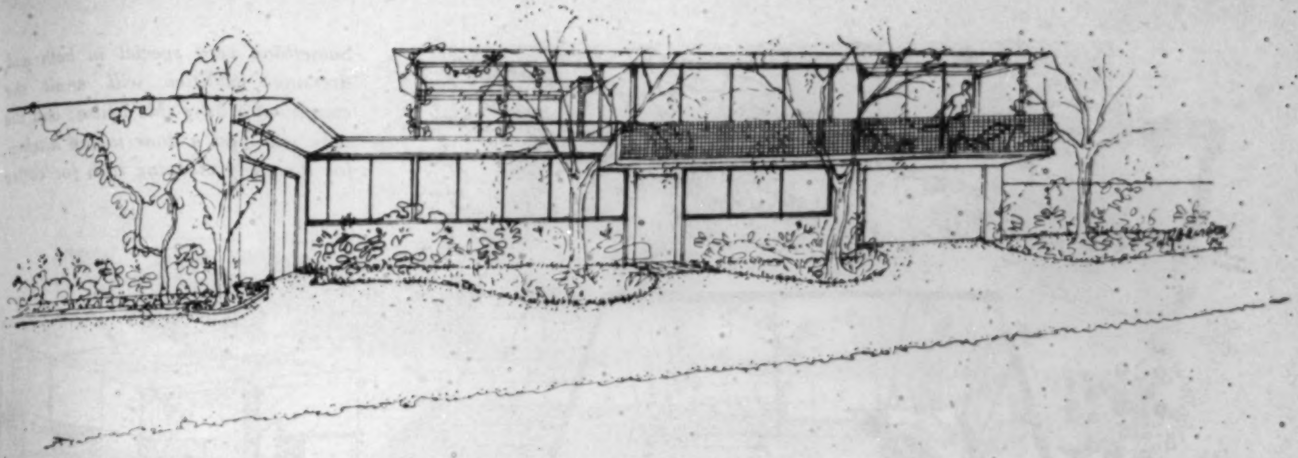


MODERN PLANNING FOR THE MARKET

Design for a small real estate development

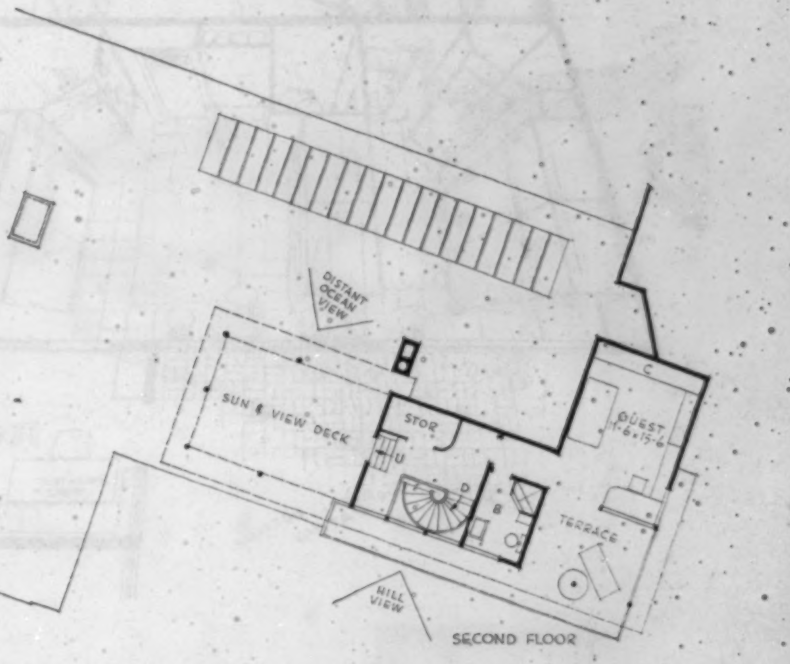
Los Angeles, Cal.; J. R. Davidson, Designer


CONTINOUS FLUORESCENT LIGHT-TROUGH ACROSS WESTWALL
PIANO
BOOKS
BOOKS
SETTEE
BOOKS
KITCHEN
STORAGE FOR CARDTABLES ETC.
HOME MOVIES • RADIO • RECORD-PLAYER • TELEVISION (COULD BE PROJECTED ON WALL ABOVE BUILT-IN PIANO–GROUP OF SEATS FOR SPECTATORS)
JR Davidson 1945

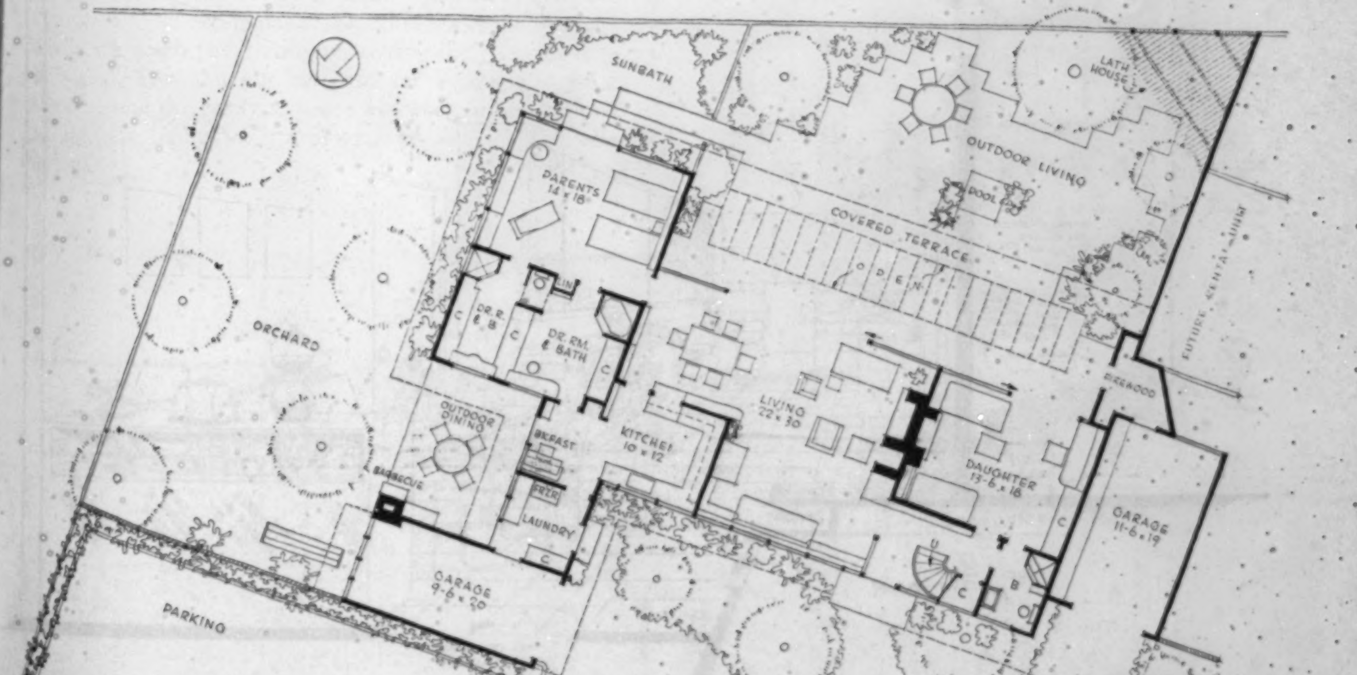


Conceived as a house to start off a small real estate development, this is nevertheless designed for a highly individual family, pictured as a couple, both professional people, with a private-school daughter. All three, plus an occasional house guest, to have complete privacy and a high order of the amenities which the postwar world is asked to provide. Since the daughter would be away for long periods, her room is designed to double as a study. The assumed guest gets a private apartment on the second floor, with separate garage for this part of the house.

A specially designed steel roof construction allows all windows and doors to go right up to the ceiling. The house is to rest on a reinforced concrete slab, with waterproof membrane, on 5 in. of gravel. Inside floors will be concrete, stained and waxed. Floor-type radiant heating with glass insulation under the slab. Design done for *Arts and Architecture*.

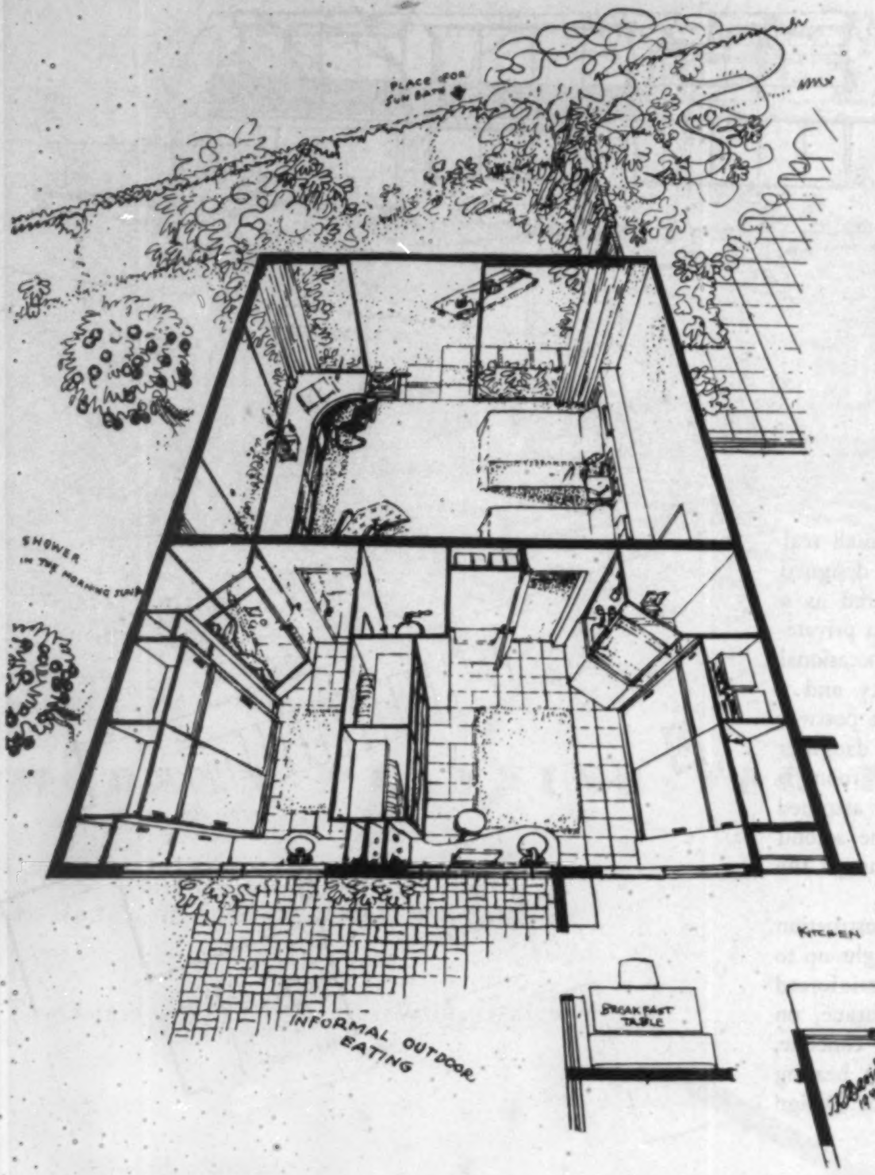

DISTANT OCEAN VIEW
SUN & VIEW DECK
STOR
U
D
B
C
GUEST 11-6×15-6
TERRACE
HILL VIEW

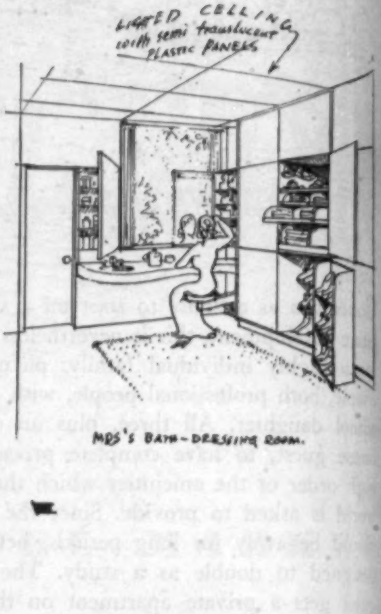
SECOND FLOOR

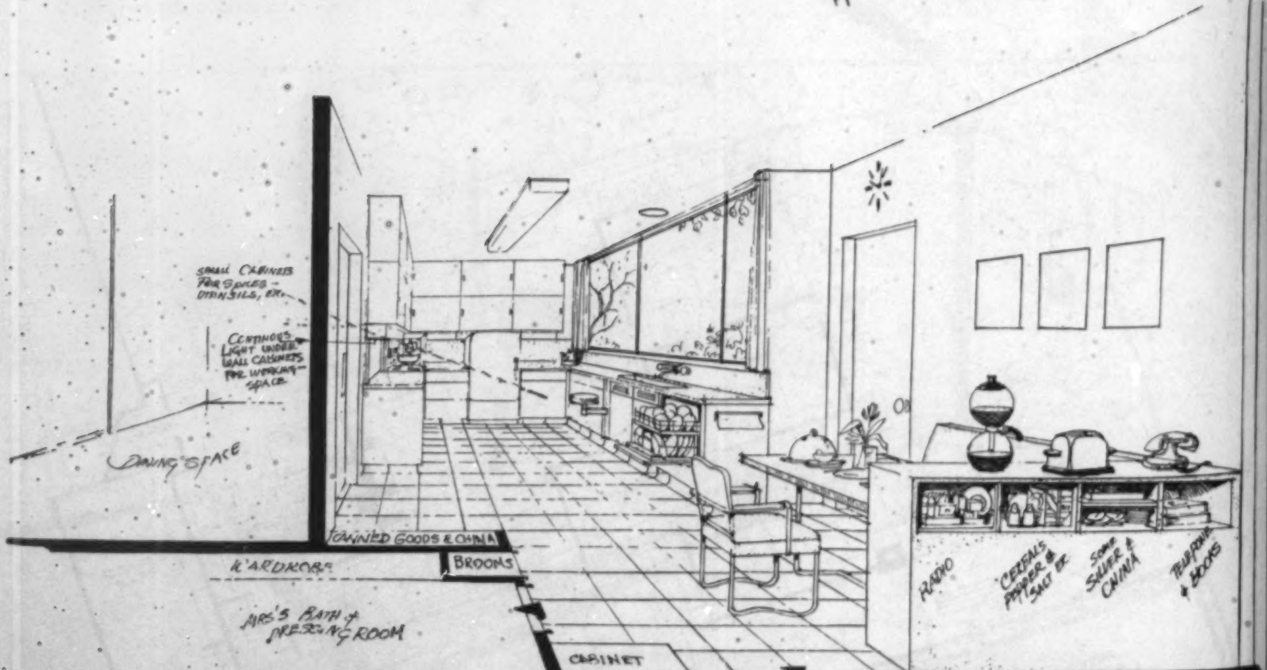

SUNBATH
LATH HOUSE
OUTDOOR LIVING
POOL
COVERED TERRACE
FUTURE RENTAL UNIT
PARENTS 14×18
LIN
DR. R. & B
DR. RM. & BATH
C
ORCHARD
LIVING 22×30
FIREWOOD
OUTDOOR DINING
BARBECUE
BREAKFAST
KITCHEN 10×12
DRIER
LAUNDRY
DAUGHTER 13-6×18
GARAGE 11-6×19
U
B
GARAGE 9-6×20
PARKING
0 5 10 15 20

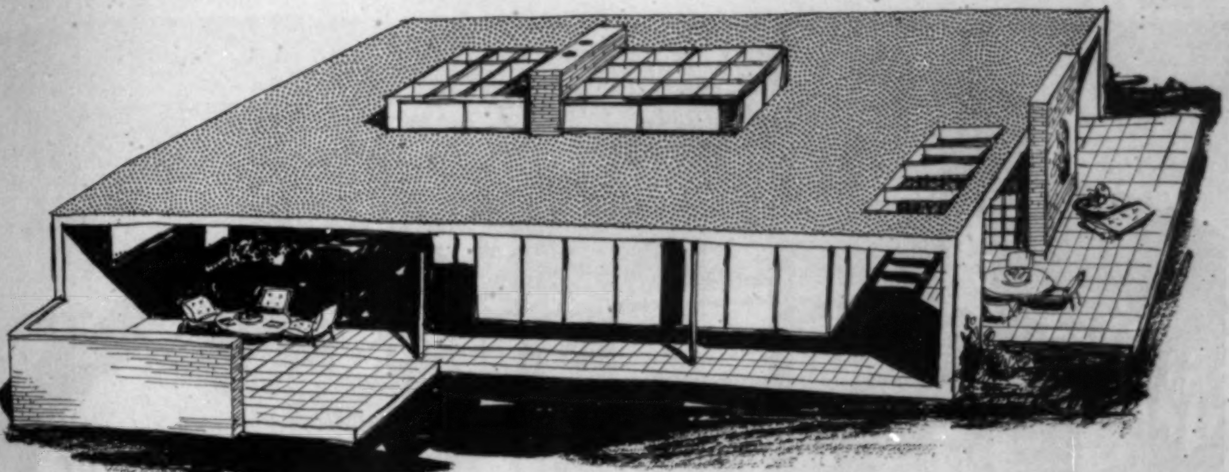
FIRST FLOOR

Something very special in bath and dressing facilities will await the couple who buys this house; and the wife will find a door to the kitchen, for the early morning rush for coffee


PLACE FOR SUN BATH
SHOWER IN THE MORNING SUN
INFORMAL OUTDOOR EATING
KITCHEN
BREAKFAST TABLE


LIGHTED CEILING with semi translucent PLASTIC PANELS
MRS'S BATH-DRESSING ROOM.

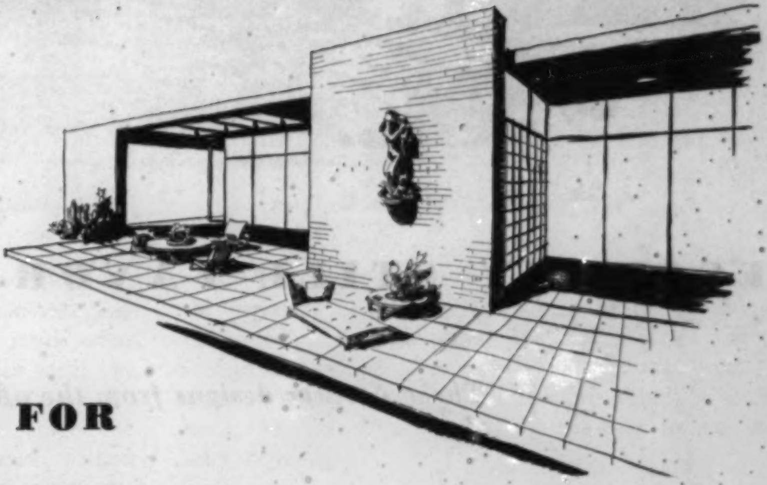

SMALL CABINETS FOR SPICES - UTENSILS, ETC.
CONTINOUS LIGHT UNDER WALL CABINETS FOR WORKING SPACE
DINING SPACE
CANNED GOODS & CHINA
BROOMS
WARDROBE
MRS'S BATH & DRESSING ROOM
CABINET
TO OPEN AIR DINING
RADIO
CEREALS PEPPER & SALT ETC
SOME SILVER & CHINA
TELEPHONE & BOOKS



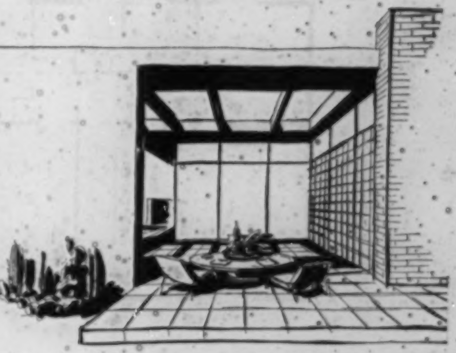
Postwar House for Mr. and Mrs. R.

Palm Springs, California

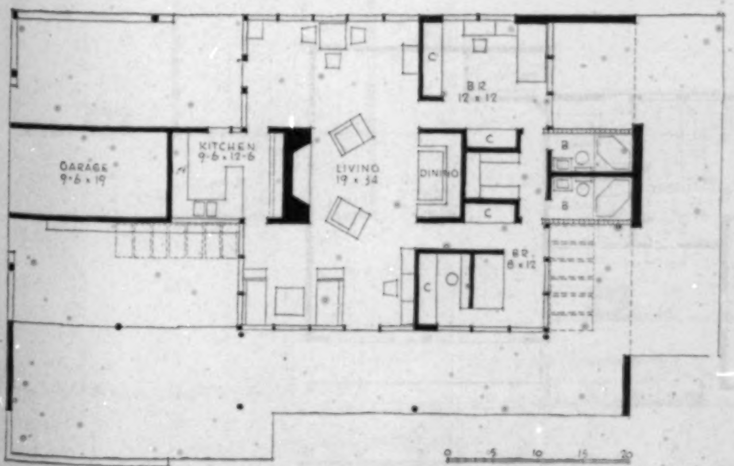
Paul Laszlo, Architect

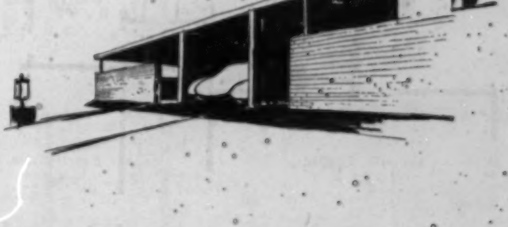


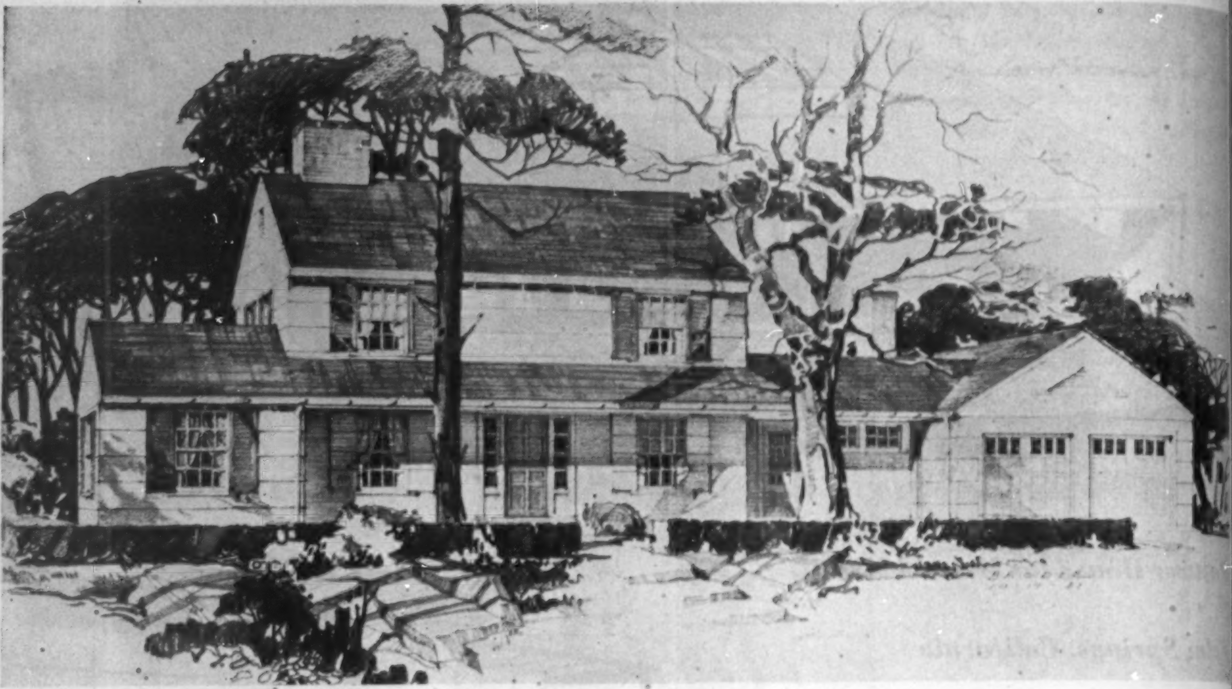
COMPACT HOUSE FOR CALIFORNIA CLIMATE



If this compact little house seems to have more area outside than inside, that is a good commentary on its purpose. The site is "an exceptionally beautiful lot with fantastic hills in the north (left) and overlooking the golf course to the west." The house is designed for a couple without children; and the partly screened outdoor terraces indicate the outdoor living so typical and so pleasant in Palm Springs.

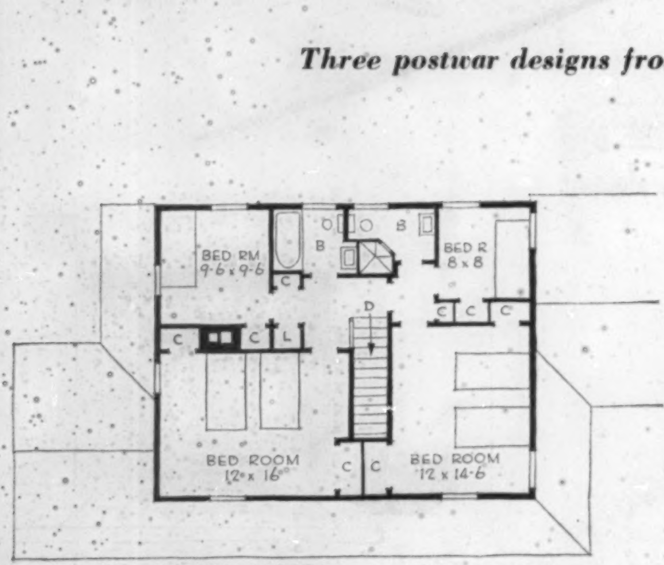

GARAGE 9'-6 x 19
KITCHEN 9-6 x 12-6
LIVING 19 x 34
DINING
B.R. 12 x 12
B.R. 8 x 12
B
B
C
C
C
C
0 5 10 15 20



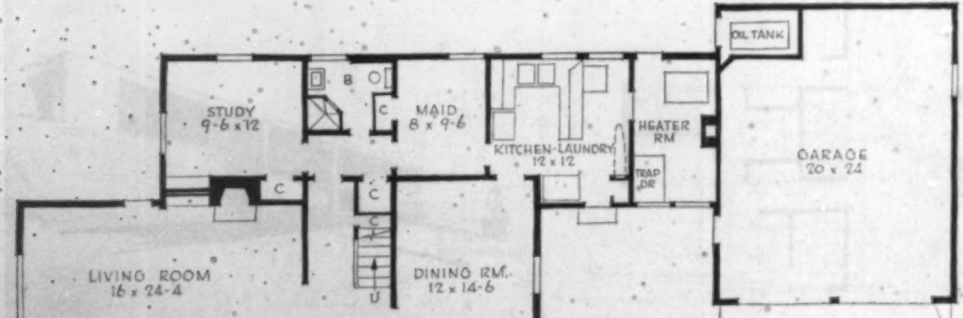


ECONOMY STILL FAVORS TWO STORIES

Three postwar designs from the office of Eleanor Raymond, Architect

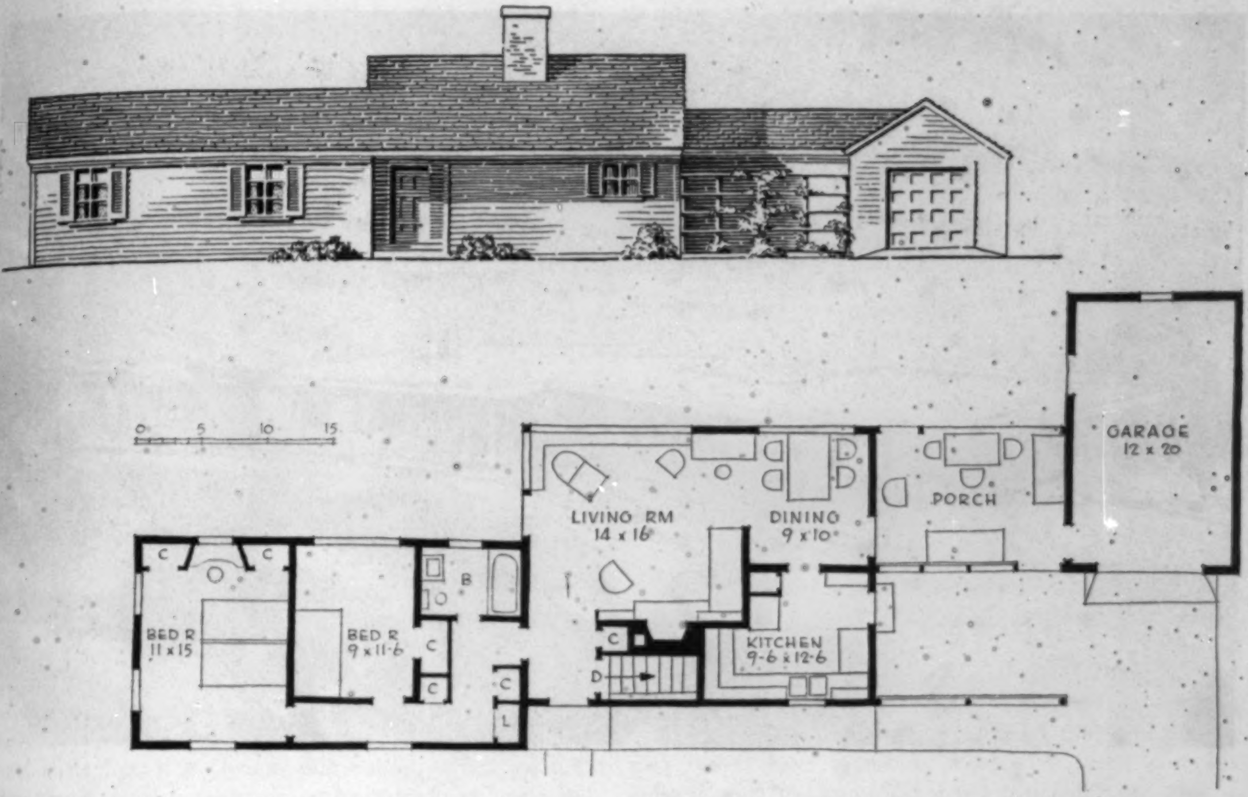

BED RM
9-6 x 9-6
C
B
B
BED R
8 x 8
C
C
C
D
C
C
L
BED ROOM
12 x 16
C
C
BED ROOM
12 x 14-6

SECOND FLOOR

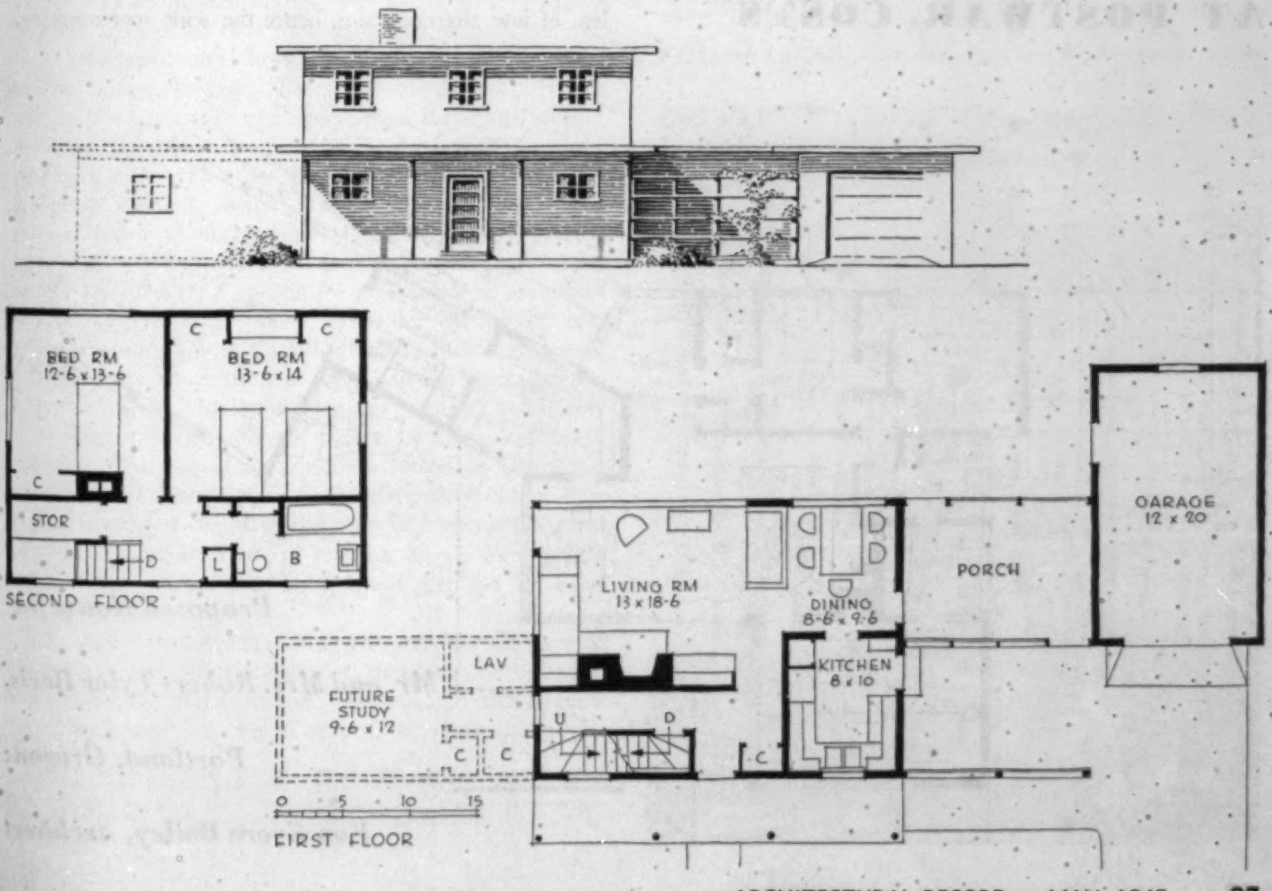

OIL TANK
STUDY
9-6 x 12
B
C
MAID
8 x 9-6
KITCHEN-LAUNDRY
12 x 12
HEATER
RM
TRAP
DR
GARAGE
20 x 24
C
C
C
LIVING ROOM
16 x 24-4
U
DINING RM.
12 x 14-6
0
5
10
15

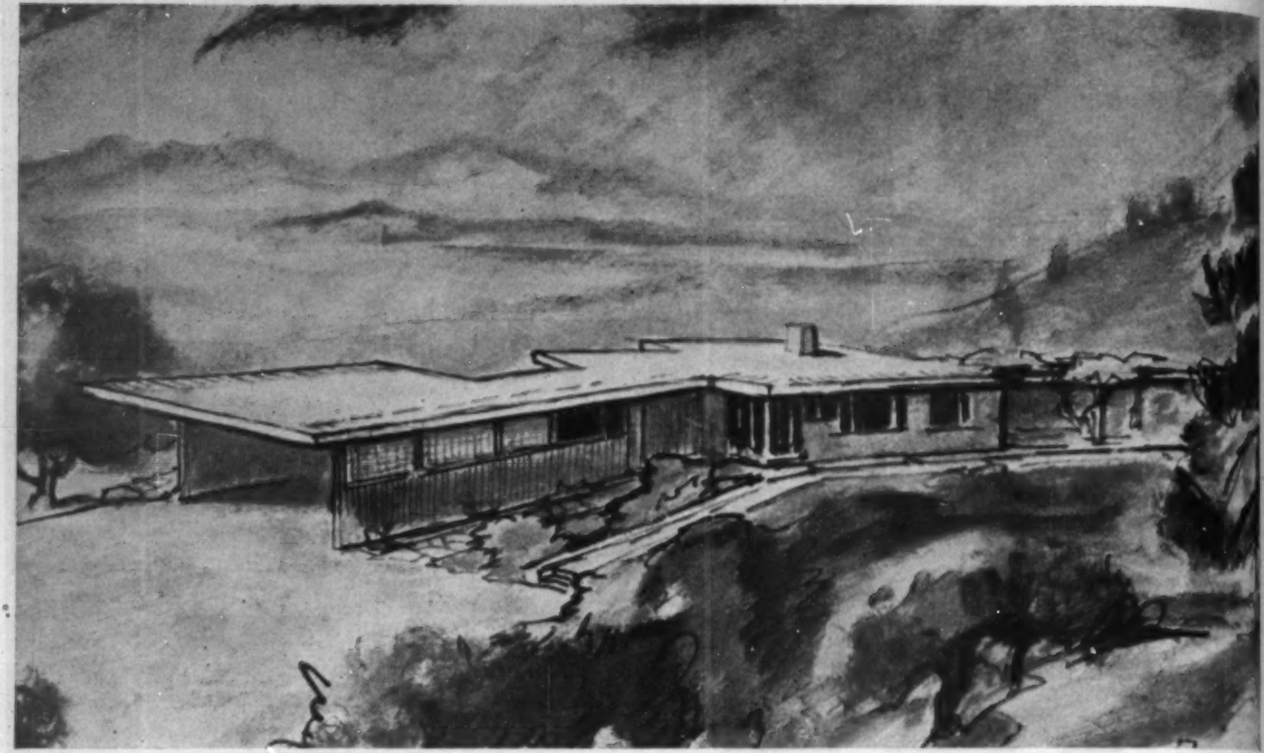
FIRST FLOOR

IF New England has a tendency toward conservatism in its houses, there are realistic reasons; a harsh climate, bringing problems of heat, insulation, frost. And costs are never taken lightly. Miss Raymond's studies of the postwar house for New England bear interestingly on the effort to adapt modern plan features to the locale, and prove again the economy of the two-story house. For example, compare the two designs on the opposite page. She analyzed them by listing first the merits of the one-story scheme: (1) west view for principal


0 5 10 15
GARAGE 12 x 20
PORCH
LIVING RM 14 x 16
DINING 9 x 10
BED R 11 x 15
BED R 9 x 11-6
B
C
L
D
KITCHEN 9-6 x 12-6

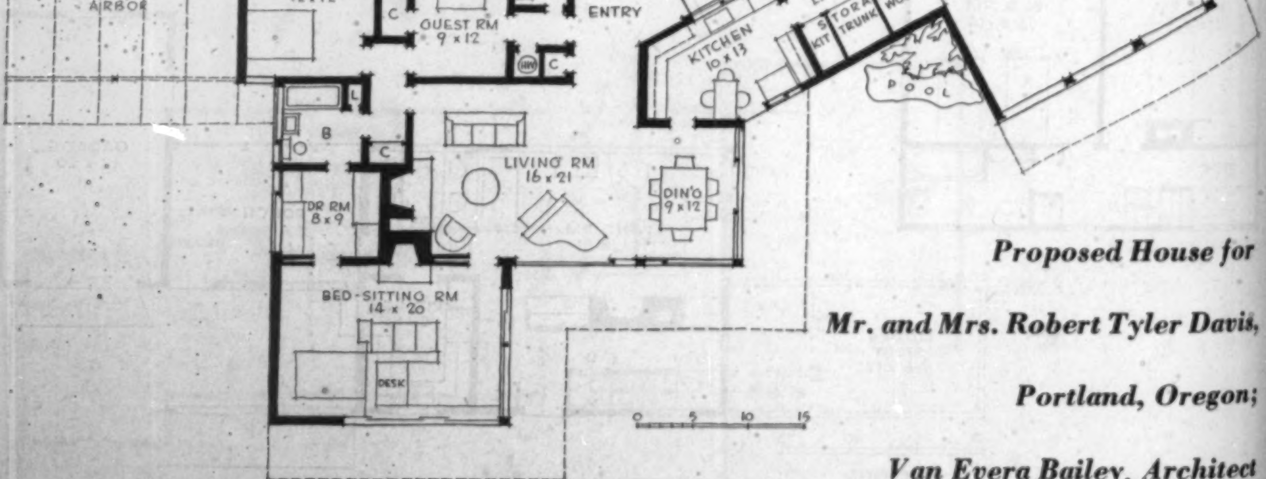
rooms and porch; (2) south sun in living room and principal bedroom; (3) east sun in kitchen; (4) inside cellar stairs; (5) good placing of kitchen and service yard; (6) garage entered under cover; (7) front door protected from rain; (8) room for bicycles and tools in garage; (9) garage and porch could be added later. She then checked the two-story version, and found all of the advantages duplicated in it, with three additional ones: (1) sitting area in living room away from kitchen passage area; (2) study or extra bedroom and lavatory could be added later; (3) cubic contents 1,115 ft. less than for the one-story design.


BED RM 12-6 x 13-6
BED RM 13-6 x 14
C
STOR
D
L
B
SECOND FLOOR
GARAGE 12 x 20
PORCH
LIVING RM 13 x 18-6
DINING 8-6 x 9-6
KITCHEN 8 x 10
LAV
FUTURE STUDY 9-6 x 12
U
D
C
0 5 10 15
FIRST FLOOR



FOR POSTWAR LIFE AT POSTWAR COSTS

"In line with economies which I think everyone will have to exercise when they run into postwar house costs," writes the architect, "I have tried to compress the den part of living into a bed-sitting room, which anyway I think has a lot of merit, rather than having what usually turns out to be two living rooms, with one favored to the exclusion of the other." Living areas are pointed toward a commanding view, but since this is toward the west, there was the problem of low afternoon sun, hence the wide roof overhang.


COVERED WALK
OPEN ABOVE PLANTING
2 CAR SHELTER
21 x 21
O P E N
ARBOR
DESK
BOY'S RM
12 x 12
C
C
GUEST RM
9 x 12
B
ENTRY
HW
C
FRZR
WMR
TR
LAUNDRY
STORAGE
KIT
TRUNK
WOOD
KITCHEN
10 x 13
POOL
L
B
C
LIVING RM
16 x 21
DIN'G
9 x 12
DR RM
8 x 9
BED-SITTING RM
14 x 20
DESK
0
5
10
15

Proposed House for

Mr. and Mrs. Robert Tyler Davis,

Portland, Oregon;

Van Evera Bailey, Architect

PREFABRICATION IN GREAT BRITAIN

*By F. R. S. Yorke**

In the summer of 1944 it was estimated that to make good the nation's housing deficit, four million dwellings would have to be erected during the first ten years after the war—and every day throughout the winter still more houses have been damaged or destroyed.

Of the million building operatives on the prewar strength, some 400,000 remain, and of these only 7,000 are under 41 years old. With this depleted labor force, a huge reconstruction program of schools, hospitals and commercial buildings, and the vast amount of repair and restoration work that will have to be done to make good the destruction due to bombing and the ravages of six years of neglect, it is obvious that houses, which are the only type of building that can be mass-produced, must be built by new and non-traditional methods. If any further incentive were needed by house designers, it is the knowledge that with no supply problems it took twenty years to produce four million houses between the wars.

It was about two years ago, when the magnitude of the problem began to be felt, that industry first gave serious attention to scientific house production, and proposals started to flood the Ministry of Works. Since there has been a ban on building other than for wartime needs, it was not possible at that time for experimenters to erect their prototypes, and for some time proposals remained at the blueprint stage. Then the Minister of Works appointed a Controller of Experimental Building Development, whose function was to examine the private enterprise proposals with a view to supporting applications for experimental building licenses. To assist him in this work, a panel of technical officers was formed, to give the projects a preliminary examination. Those projects showing promise were forwarded to a committee composed of architects, builders and housing experts, on whose advice the controller acted in supporting applications for building licenses.

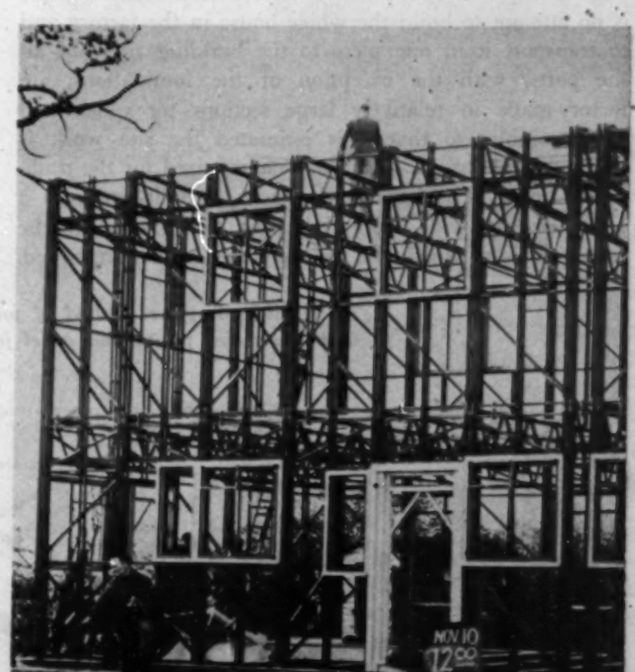
In the years before the war there had been little interest in prefabrication. Houses were being produced at the rate of anything up to 360,000 per annum by normal methods, and there had seemed no reason to introduce alternative systems. News from the U. S. A. after the Chicago Fair seemed to suggest that prefabrication had been a flop, and no one was prepared to try it here. There were a few architect enthusiasts, but they could get no financial backing for their ideas.

This meant that when, during the war, the urgency of the postwar problem was foreseen, there was no technical background for prefabrication. The research that should have been going on over a number of years had to be compressed into months. Fortunately, the Building Research Station had undertaken an examination of the alternative systems produced in the 1920's, and the published results of their examinations have helped the present-day experimenters to avoid many of the common pitfalls. It also means that there is now at the Building Research Station a number of men whose technical knowledge is of great value to the Ministry of Works in its examination of the new proposals.

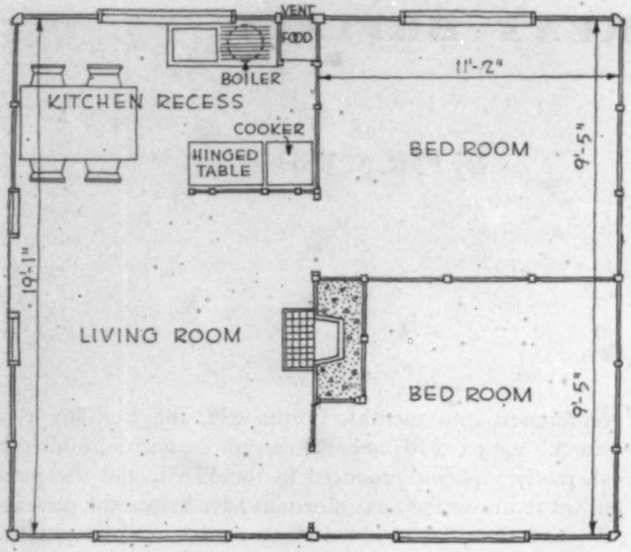
The imposition of wartime controls on building has had a salutary effect in preventing a widespread perpetration of fantastic ideas. Had there been no control, almost every idea would have found its financial backer. Since his appointment, the controller has examined more than a thousand schemes, but not more than fifty licenses have been issued.

Before a proposal can be supported for an experimental building license, it must show a high degree of technical efficiency and must conform with recommended standards for structural stability, thermal insulation, fire resistance, resistance to moisture penetration and vermin infestation, and must have a party-wall that will prevent the transmittance of sound.

Keyhouse Unibuilt has steel frame, asbestos-cement siding



**Fellow of the Royal Institute of British Architects, who was architect for the Braithwaite steel frame house 1943-45 and has now been appointed architect for Britain's Borough of Surbiton for postwar houses. Author of "The Modern House," "The Modern Flat," "The Modern House in England."*


VENT
FOOD
BOILER
KITCHEN RECESS
COOKER
HINGED TABLE
11'-2"
BED ROOM
9'-5"
19'-1"
LIVING ROOM
BED ROOM
9'-5"

Uni-Seco building panels have a wood-wool core faced on both sides with asbestos-cement sheets

At the present time about thirty different prototypes for permanent postwar house construction are being, or have been, built. The prefabricated types can be divided broadly into those having a steel, reinforced concrete or aluminum frame, those using precast concrete slabs for pier and panel work, those with large composite units framed in timber, and the stressed skin plywood types. There are also proposals for simplified or prefabricated brickwork and for *in situ* concrete using various types of formwork. Those that use timber lavishly are not encouraged, since it is unlikely that timber will be freely available in Britain in the immediate postwar years.

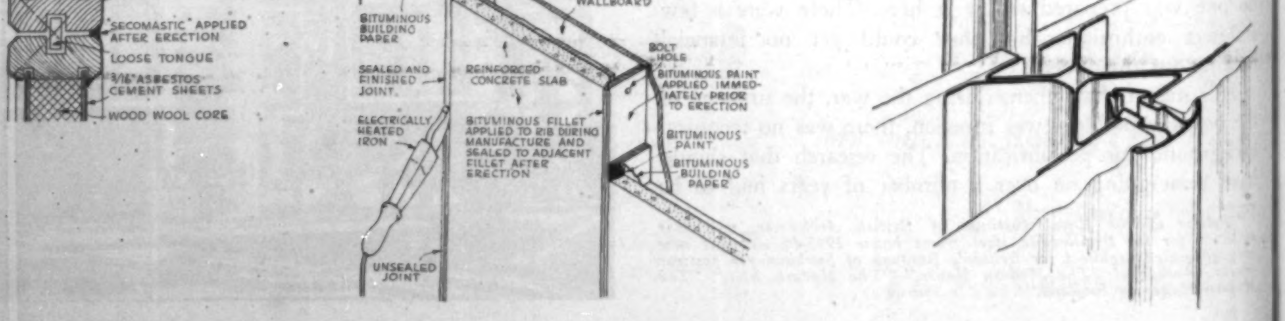
One of the first prototypes to make its appearance was the Keyhouse Unibuilt, erected at Coventry early in 1944. This is a prefabricated house with a steel frame. There is no attempt to build the whole house in the factory and to transport it in one piece to the building site, but all the parts, with the exception of the foundations, are factory-made in relatively large sections for quick and dry assembly, so that it is estimated the site work is reduced to about one-fourth of that required for the traditional house. The light steel chassis is built up from a series of 4 ft. wide, story-high light steel frames, to the intersections of which the floor and roof beams are bolted. The frames are made from cold rolled strip steel sections welded together. External cladding units are 4 ft. 2 in. asbestos-cement trays, packed with wood-wool slabs. They are fixed to the steelwork with steel clips. The house is lined internally with plasterboard. Floor and roof slabs are 2½ in. thick, precast aerated concrete.

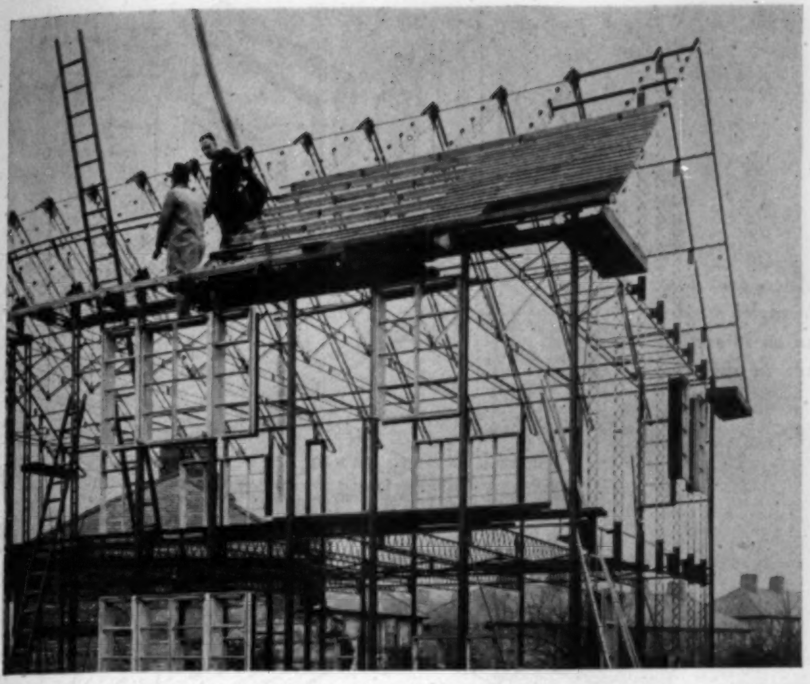
Then came the Uni-Seco house. The building units in this case have a core of wood-wool faced on both sides with asbestos-cement sheets, and edged with timber. The units are story height and 3 ft. to 4 ft. wide, and are complete with doors and windows. They are joined together with wood splines and screws. The floor units are stressed skin plywood panels, spanning the full width of rooms.

The Housing Department of the Corporation of Glasgow has built experimental flatted houses using large, precast, foamed slag concrete slabs. External wall slabs are 6 in. thick by 8 ft. 8 in. high. The width varies, and is as much as 10 ft., the heaviest slab weighing about 1¼ tons. A slab of similar size in ordinary dense concrete would weigh about 2 tons. Mobile cranes are used for erection of the slabs. The thermal insulation value of the 6 in. slab is rather better than that of 11 in. unventilated cavity brick-walling. Partitions are built with 4 in. slabs, and the party-walls are 12 in. thick, consisting of two 4 in. partition slabs and a 4 in. cavity. The external walling of the block of four dwellings was built with 72 slabs, the partitions took another 66. The slabs are rough-cast outside and are plastered internally. A 6 in. thickness of foamed slag is quite weatherproof. The slabs are mass-produced in the factory by casting the concrete in steel framed molds, faced with expanded metal. The slabs are steam cured for 24 hours, so saving three-quarters of the time taken in a natural curing process and releasing molds for re-use at an economic rate. Floors and roofs are formed with hollow precast reinforced concrete beams. A layer of foamed slag concrete over the roof beams provides thermal insulation. A factory is being built to produce the slabs required for the production of 2,000 houses a year.

In September, 1944, Messrs. Braithwaite began the erection of a prefabricated house on the London County Council Watling Estate at Burnt Oak. After three years of research and experiment, the firm was ready to try out a prototype, using a steel chassis assembled from steel unit frames. This system, for permanent house construction, has been developed to enable a wide range of house types to be built from a series of standard size prefabricated

Left, Uni-Seco spline method of joining panels. Center, Tarran method has mainribs of plywood with heat-sealed bituminous panel joints. Right, Braithwaite uses spring clip for holding side panels


SECO UNITS FIXED TOGETHER AT SITE WITH 2½" SCREWS
"SECOMASTIC" APPLIED AFTER ERECTION
LOOSE TONGUE
3/16" ASBESTOS CEMENT SHEETS
WOOD WOOL CORE
VERTICAL PLYWOOD MAINRIBS
WING NUT AND BOLT
WALLBOARD
BITUMINOUS BUILDING PAPER
SEALED AND FINISHED JOINT.
REINFORCED CONCRETE SLAB
BOLT HOLE
BITUMINOUS PAINT APPLIED IMMEDIATELY PRIOR TO ERECTION
ELECTRICALLY HEATED IRON
BITUMINOUS FILLET APPLIED TO RIB DURING MANUFACTURE AND SEALED TO ADJACENT FILLET AFTER ERECTION
BITUMINOUS PAINT
BITUMINOUS BUILDING PAPER
UNSEALED JOINT



Birmingham Corporation houses use a steel frame of lattice design with welded stanchions and beams built up from small standard flats and rods. Exterior finish may be varied

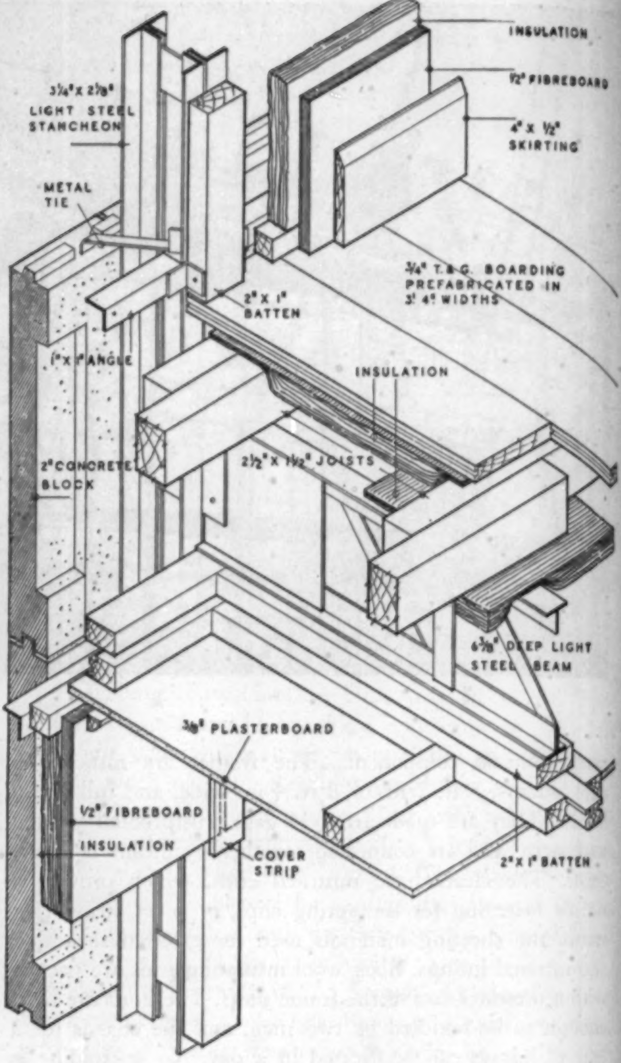
mass-produced components. The frames are rather like steel ladders, 3 ft. 2 in. or 6 ft. 4 in. wide, and full house height. They are made from 14 gage, rustproofed welded steel strip, and are connected together by means of angle cleats. The cleats have inturned ends, which provide a simple fastening for the spring clips, or cover strips, that secure the sheeting materials used for external sheathing and internal linings. Rock wool insulating pads are packed within the thickness of the frame units. The units are light enough to be handled by two men, and the chassis for a pair of houses can be erected in a day. No scaffolding is required. The upper sheathing sheets are positioned from a small mobile tower. The floors and roof are supported on light-gage cold rolled steel strip beams, bolted to the vertical members of the wall frames at 3 ft. 2 in. centers. Composite plywood flooring units 3 ft. 2 in. by 6 ft. 4 in., span between the beams. The roof is composed of 3 ft. 2 in. square cellular concrete insulating slabs, weatherproofed with bitumen and bituminous sheeting. The system is now being tried for 3-story flats in Chelsea, using aluminum alloy for the frames.

The Howard house also has a steel frame. The system of construction developed for this house is related to the particular plan type which the promoters consider most nearly satisfies all requirements. Three variations on this plan type are offered, and the houses can be built in pairs or in terraces, but the system is not intended to be sufficiently flexible to suit a wide range of plans. The kitchen, bathroom and W.C. are planned together as a unit, separate from the living and sleeping parts, and this concentration of services makes it possible to prefabricate all the plumbing and to plan against noise. The structural system consists of a series of light but strong welded steel frames onto which prefabricated cladding units are mounted. The greater part of the fabrication takes place in the factory, the work on the building site amounting only to assembly. This assembly is a dry one, and the parts are put together in their finished state without wet processes. When the steel frame is erected, the ribbed asbestos-cement roofing sheets are put on, so that subsequent work is carried out under cover. External wall surfacing units are in large panels of asbestos-cement, with an applied colored texture. The plinth of the building is formed from precast concrete units faced with briquettes or tiles. The house is lined inside with laminated panels of aluminum foil, wood-wool and fiberboard.

The Birmingham Corporation has experimented with a house based on the Hill steel frame. The frame is composed of light, lattice type, welded stanchions and beams, built up from small standard flats and rods. The frames are spaced at 3 ft. centers and span from front to back of the house. The roof may be flat or pitched, and the completion of the roof is the first operation after erection of the frame, so that subsequent operations can take place under cover. Various types of walling material are suggested; the one adopted by Birmingham is asbestos-cement tiling externally, with a cavity, and a breeze or foamed slag block lining.

At Hull, Robert Tarren has built a dry construction house, using precast reinforced concrete slabs, in resin bonded plywood frames, for the external walling units. Joints between the units are made with heat treated bituminous mastic. The system is applicable to various plan types. Floor units are composite prefabricated plywood panels, measuring approximately 12 ft. by 4 ft., with steel channel edge members and ½ in. plywood finish on the upper surface.

The British Power Boat Company is experimenting with a system of house construction using resin bonded plywood. The system uses plywood for internal and external wall surfaces, and by designing on the stressed skin principle it uses plywood structurally. The internal and external surfaces or skins are made to take the main stresses. Prefabricated panels are built up in the factory with plywood skins and light timber internal members. All the wall and partition panels are 3½ in. thick, made up from two ⅜ in. plywood skins and 2¾ in. by ¾ in. Columbian Pine studding at 12 in. centers. The large panel measures 24 ft. by 8 ft., and contains door and windows. Floor panels are similar in construction and span the full width of rooms.



Northolt houses also use light fabricated steel sections. Posts are built up from four one inch by one inch angles welded to one-eighth inch plate webs which then form an H section. Several types of exterior finish may be used; in this case precast concrete panels are shown

They are made in a series of standard sizes up to 12 ft. by 8 ft. The panels are 6 ft. deep and are made up from a ⅜ in. top ply, ½ in. bottom ply and ⅜ in. studding. Heat insulation is obtained by packing the external wall and roof panels with glass wool blanket.

Britain's government is encouraging the idea that postwar houses should be prefabricated, and to overcome anticipated shortages of materials and labor has adopted a program for the provision of small, single-story houses with a life limited to ten years. By extensive use of prefabrication it is estimated that 200,000 such houses can be erected in the time it would take an equal labor force to build 60,000 permanent houses of the same size by traditional methods. These temporary houses are not given a limited life because the systems of construction involved are in any way deficient, but only because of their substandard size. Indeed, some of the systems respond so well to technical tests that they are now being reviewed to see whether they are of sufficiently high standard to warrant their application to "permanent" housing.

At the Northolt Demonstration Housing Estate, the Ministry of Works has exhibited a flexible system of prefabrication for "permanent" buildings which adopts the steel frame principle. In this instance, the frame is of light fabricated steel sections. The posts are built up from four 1 in. by 1 in. angles welded to ⅛ in. plate webs spaced at intervals to form an H section. The ground and first floor beams are built up from two 1¼ in. by 1¼ in. tees welded to ⅛ in. plate lattice web to form an H section. Light king post trusses composed of members of similar construction to the beams form the framework for a pitched roof with hipped ends. The whole frame is treated with a coat of bituminous paint before delivery and is erected on the site by bolted connections, the only plant required for erection being a pole and blocks and tackle for hoisting. This frame will take more than one type of cladding, is economical in labor and materials and maintains high standards of efficiency and permanence.

Here the external cladding consists of vibrated concrete panels 2 in. thick, 3 ft. 4 in. long and 1 ft. 4 in. high, laid with straight horizontal and vertical joints bedded in cement mortar. They are attached to the steel columns by galvanized steel ties bedded in the joints and are insulated from direct contact with the posts by damp-proof felt strips. The party-wall is built of two leaves of 3 in. clinker concrete slabs with a cavity which contains steel framing and bracing, giving rigidity to the frame. The internal cladding to the exterior walls is composed of a 1 in. lining of glass wool blanket with a finishing surface of ½ in. fiberboard. Internal partitions are composed of prefabricated timber framed panels, 3 ft. 4 in. wide and room height, with a finish of ½ in. fiberboard pressed and glued to each side. The edges of the timber frame are grooved to receive wooden rods by which the panels are fixed to each other and to the floor and ceiling runners. The ground and first floors consist of prefabricated sections of grooved and tongued boarding nailed to 2½ in. by 1½ in. timber cross joists. Ceilings are prefabricated in sections of ⅜ in. plasterboard glued to timber panels, approximately 4 ft. by 3 ft. 4 in., and are set in place on special wooden guides fixed to the battens on the steel frames.

By demonstrating the advantages of prefabrication in this block of flats the Ministry of Works has materially assisted the case for the unit building, for in the early postwar years all house building in Britain will be to order of the local authorities, who are all inspecting the new methods of construction exhibited at Northolt.

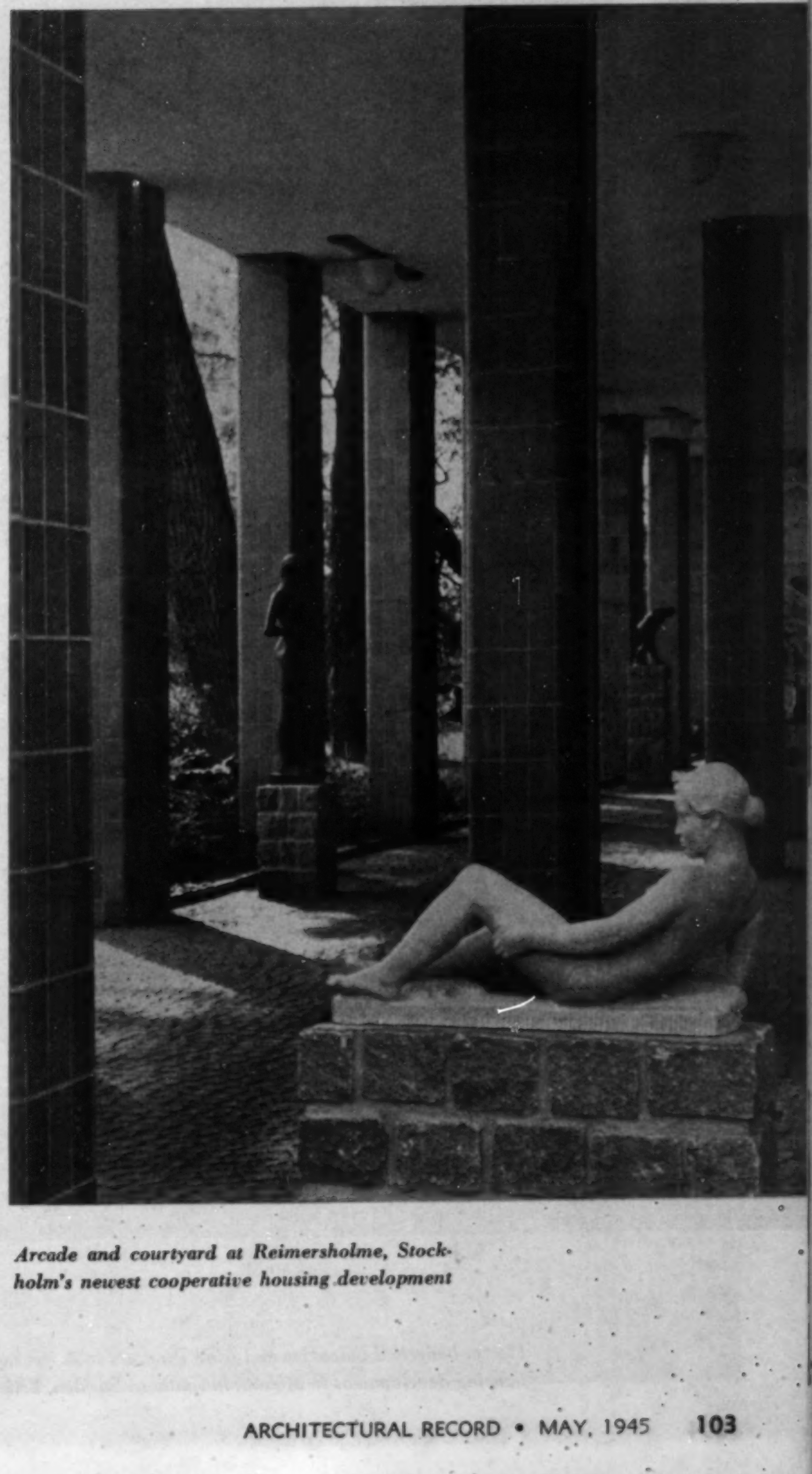
SWEDISH DESIGNERS CARRY ON IN WARTIME

ARCHITECTURE, INTERIORS, TEXTILES AND FURNITURE

Despite her almost complete isolation from the outside world during the last five years, Swedish architects, artists and craftsmen have continued to create and design. Unable to enjoy the accustomed intellectual intercourse with colleagues in other countries, Swedish artists have had to turn to their own country's past, to follow national trends and indigenous forms, to explore the vast treasure of native art from which to gain inspiration for the designs of today. So rich is that store, and so vital is the Swedish art spirit, that the result has been a happy blend of charm and reason, of beauty and function, of vision and character.

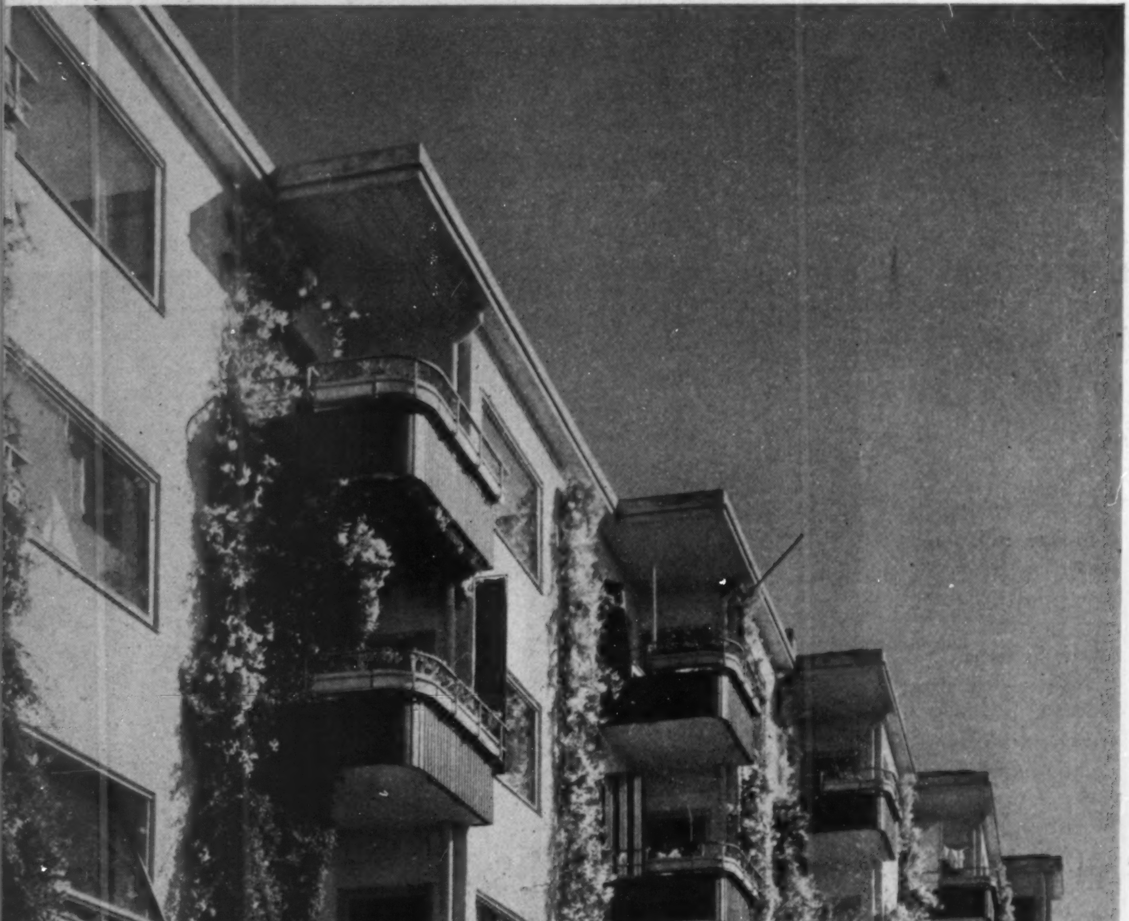
The simplest of means and materials are used with characteristic sense of scale and feeling for proportion and form. There is an appropriate economy of material and a lightness of touch that is suave, clean-cut, altogether pleasing.

Current at the Architectural League in New York is an exhibition of photographs of Swedish architecture and industrial art, 1940-1945, jointly sponsored by the League and the American-Swedish News Exchange in New York, which brought the pictures to this country. A few of the 300-odd photographs are reproduced on these pages. They give an affirmative answer to the question, "Has Sweden kept alive and progressive her native architecture and allied arts during the war?"



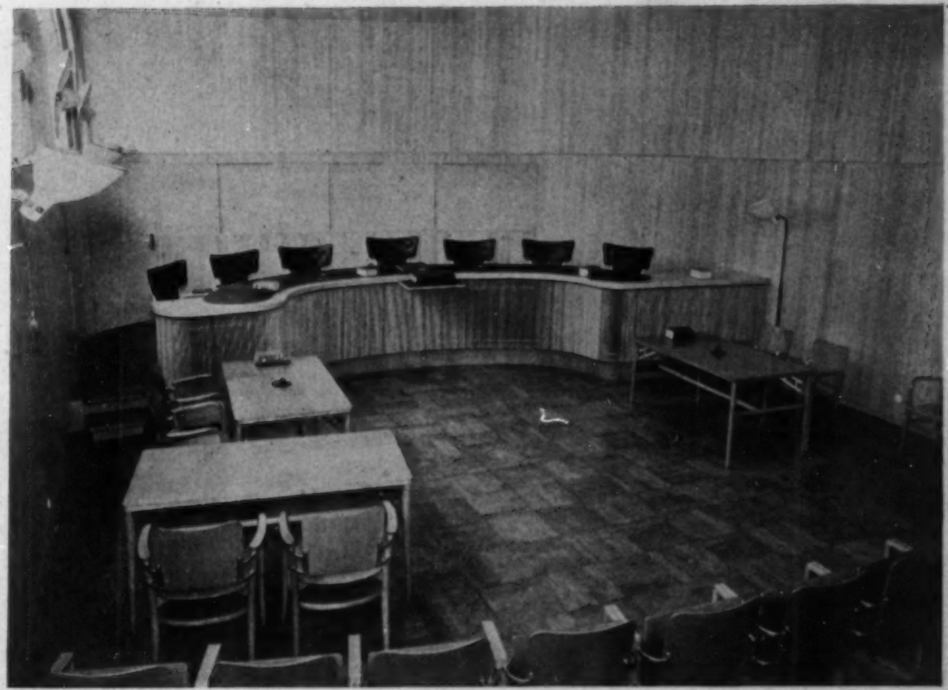
Arcade and courtyard at Reimersholme, Stockholm's newest cooperative housing development

SWEDISH DESIGNERS CARRY ON IN WARTIME *(continued)*



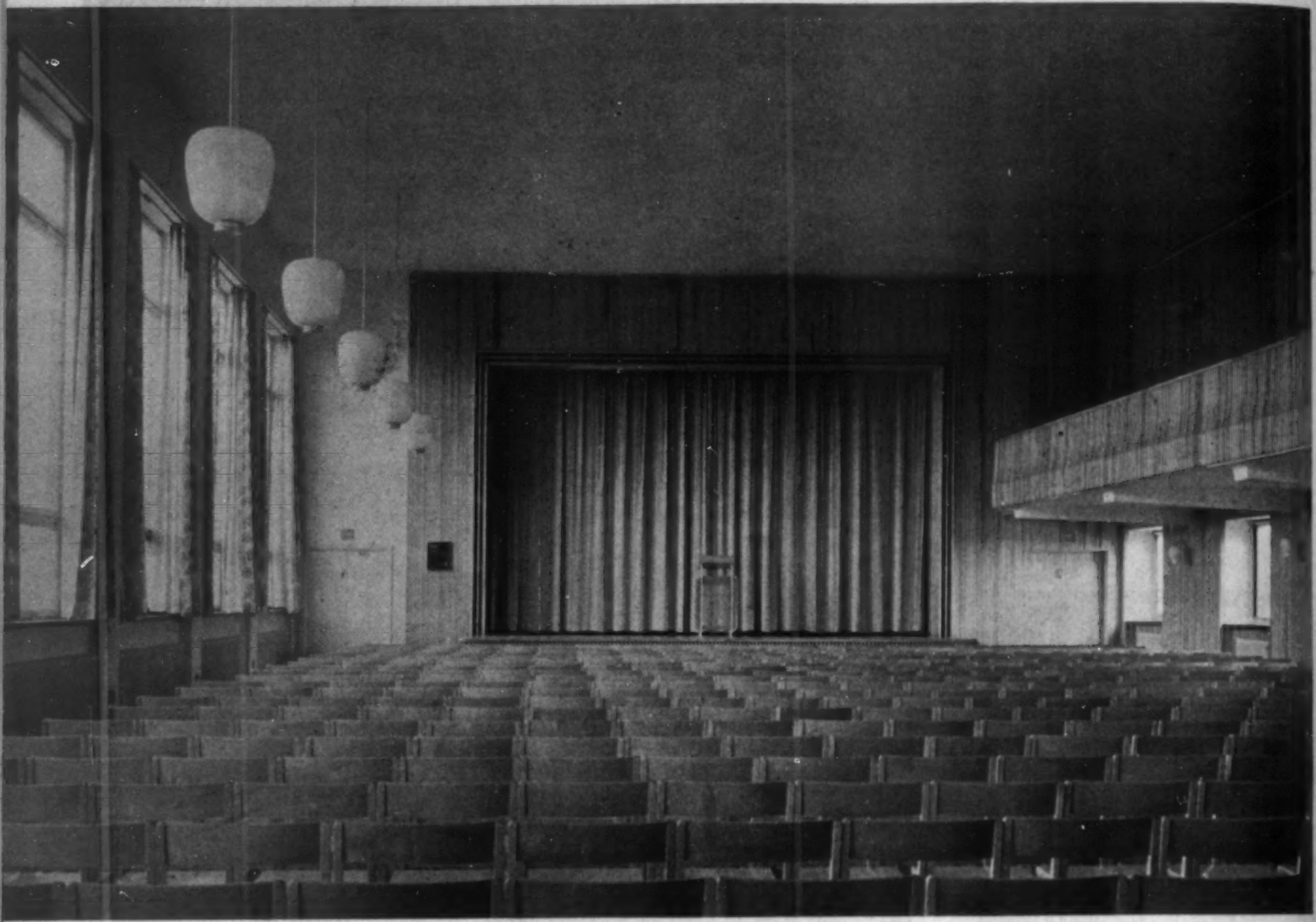
Flower-bedecked balconies and wide windows look out over the water at Ribershus housing development in Malmö, in southern Sweden. Erik Sigfrid Persson, architect

Above: Houses for workmen at the Sandviken Iron Works in northern Sweden. Extreme left: Workmen's homes at the Hällefors Iron Works. Left: Cooling water and stately trees enhance the setting of Reimersholme, Stockholm's latest cooperative housing development

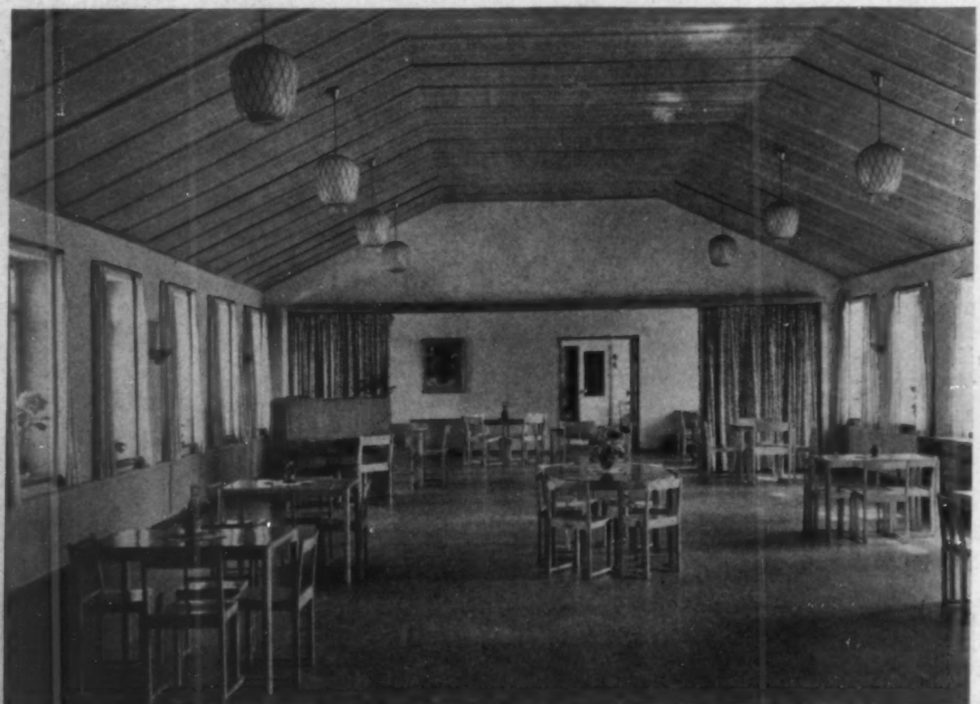


Council room in the Gothenburg Law Courts

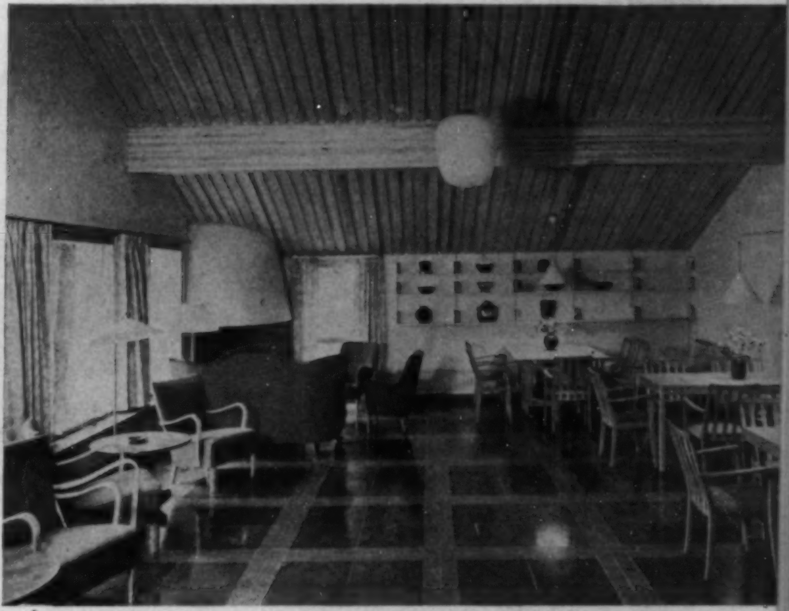
SWEDISH DESIGNERS CARRY ON IN WARTIME *(continued)*

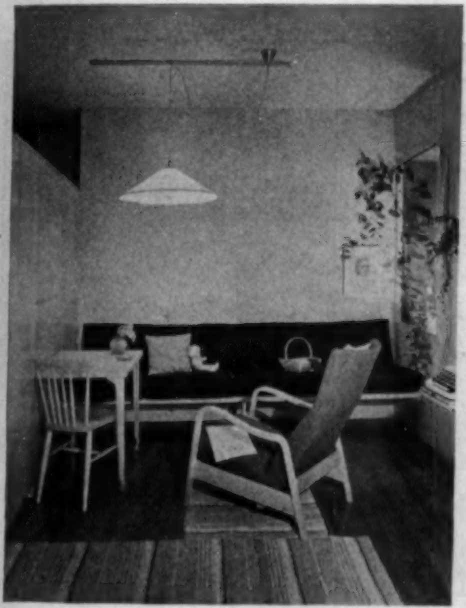


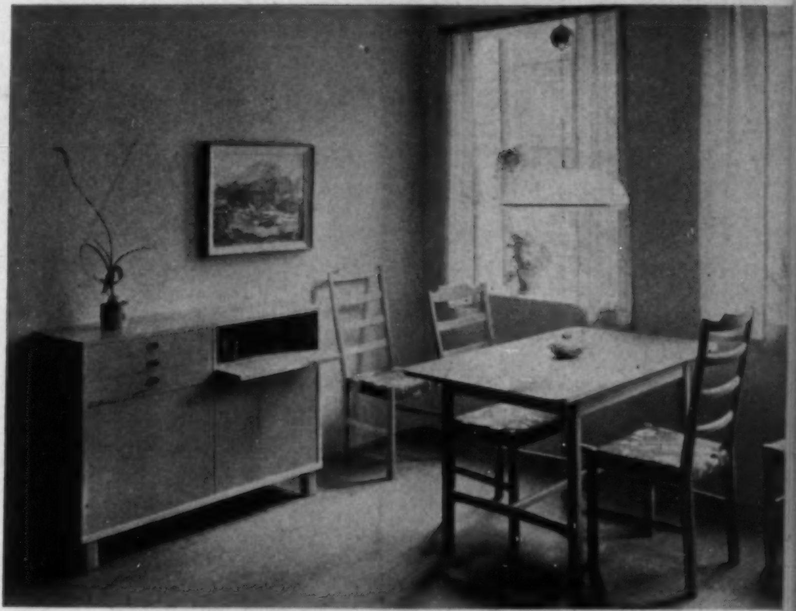
Auditorium, Kungsholmen School for Girls, Stockholm. Below: Club and recreation center for employees at the Swedish General Electric Company in Västeras

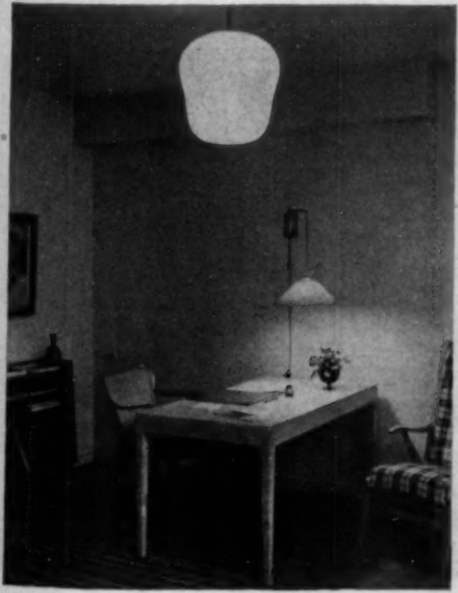


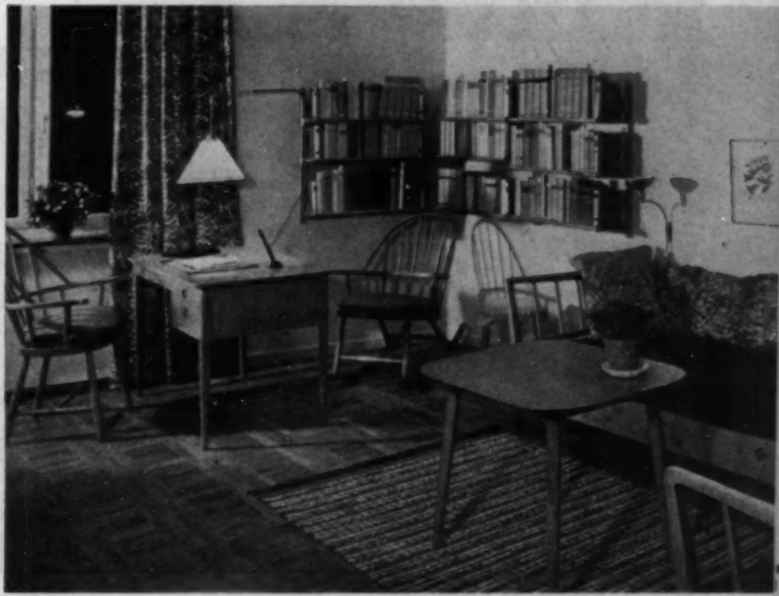
Right: Dining and social hall in the Boy Scout cabin built for the workers at the Gustavsberg Porcelain Factory near Stockholm, a plant owned and operated by the Swedish Cooperative Union. Olof Thunström, architect. Below: Characteristic domestic interiors, simple and informal, with interesting adjustable lighting devices. Modern interior designed and executed by G. A. Berg. Below, right: Living room dining corner in a Stockholm apartment. Bottom left: Modern furniture from Svenska Möbelfabrikerna. Bottom right: Modern interior designed by Elsa Gulberg of Stockholm

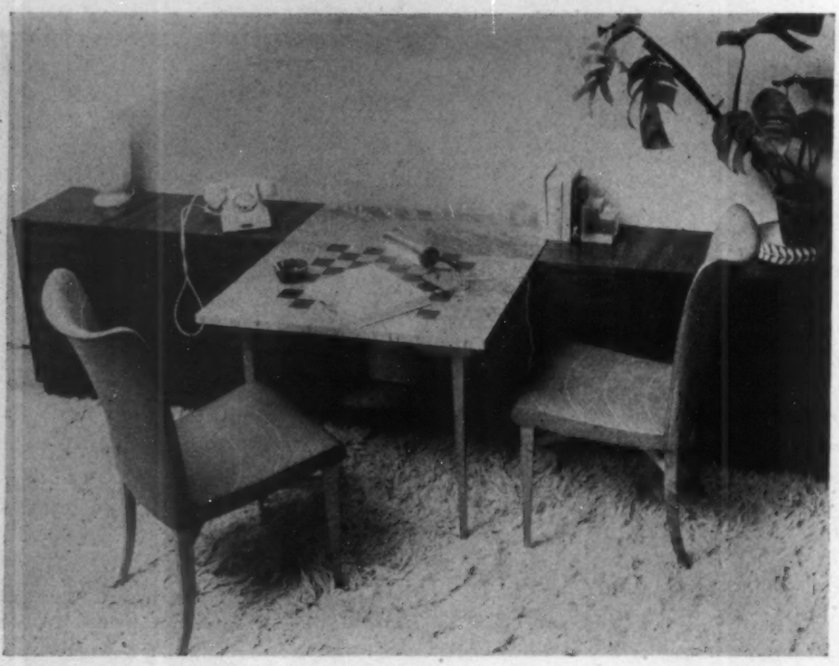




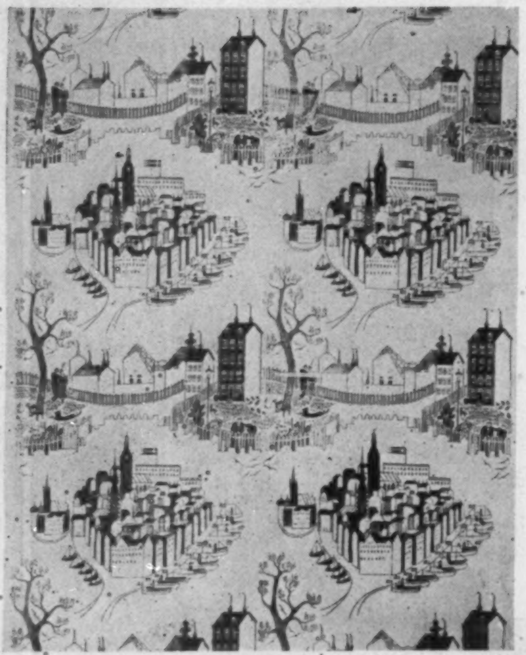


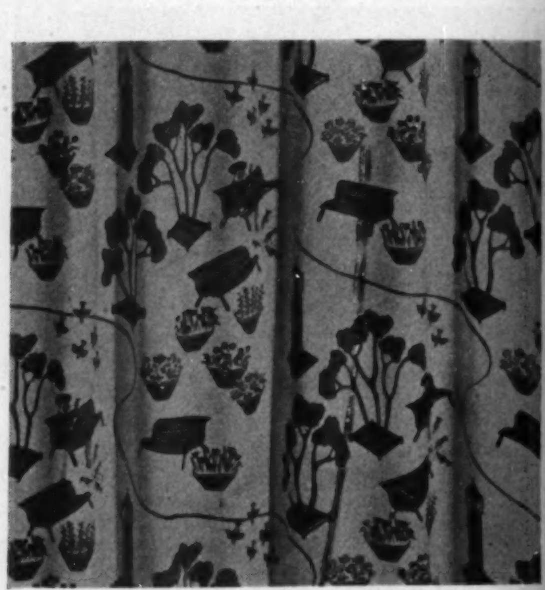




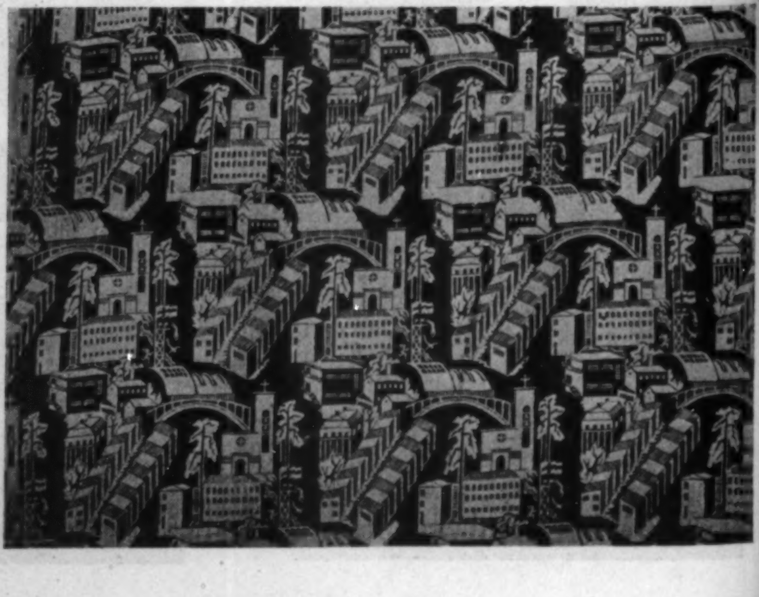


Left: Folding combination work desk and game board, from the Nordiska Kompaniet department store in Stockholm. Below, left: Textile with motif from Stockholm, showing "The Old City Between the Bridges" and the Royal Palace with its three-pronged flag. Designed by Sofia Widen, executed by Licium Studio. Below: Textile inspired by "Nybroplan," a well-known Stockholm square, dominated by a clock tower and made colorful and bright by tubs of gay flowers. Designed by Edna Martin, executed by the Mölnlycke mill

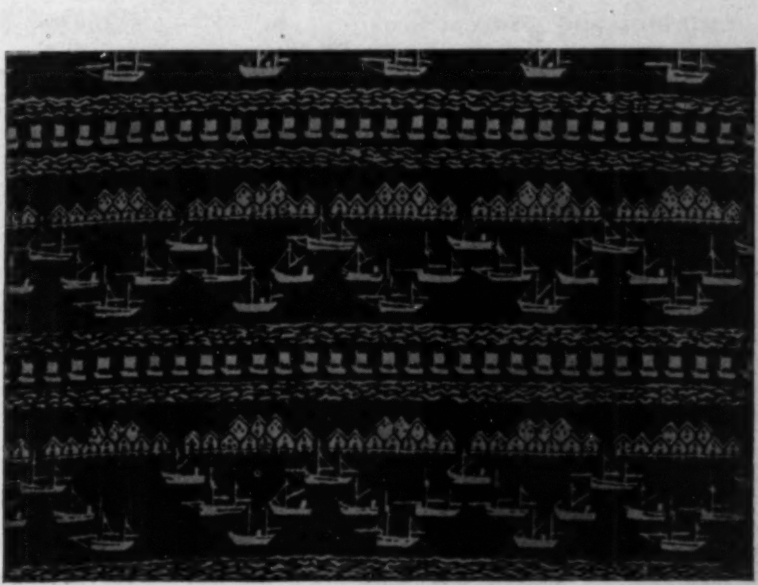


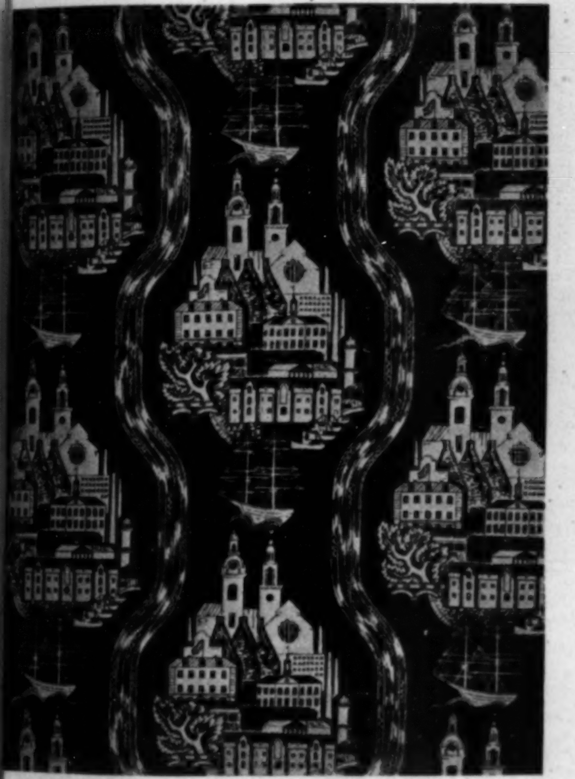


Right: A printed cloth by Sofia Widen, in one color, with motif from the Stockholm garden city of Äppelviken, showing church and row-houses. Intended for town hall or community building

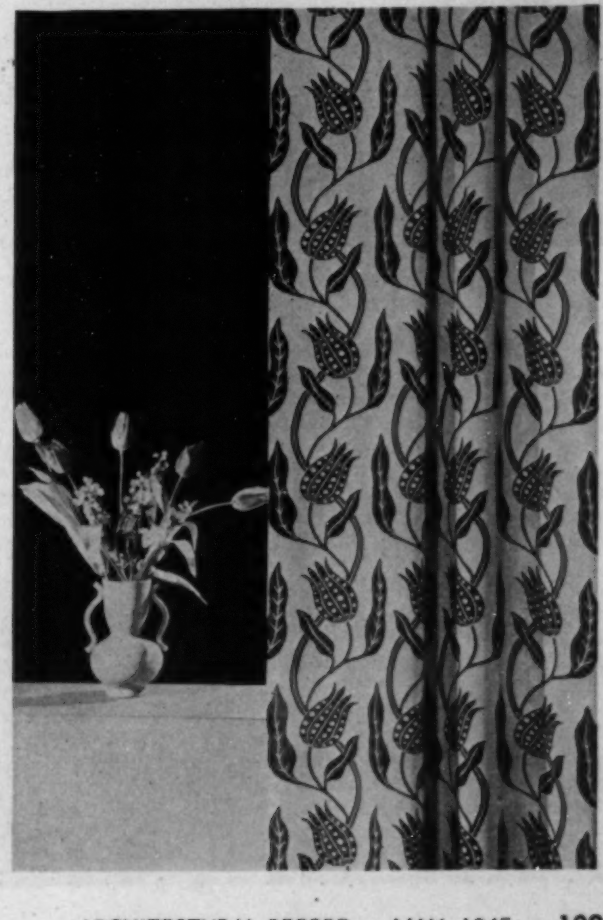


SWEDISH DESIGNERS CARRY ON IN WARTIME *(continued)*



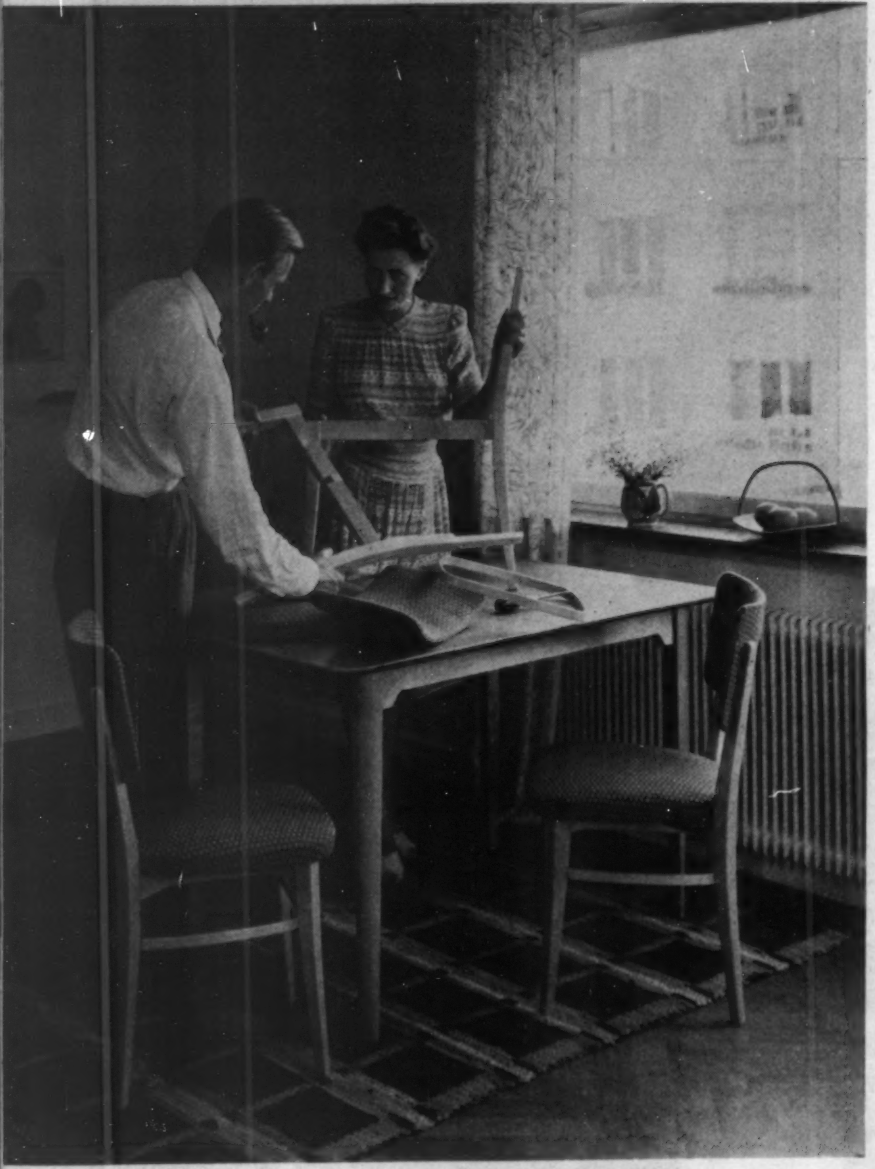


Above: "West Coast Fishing Boats." Printed cloth by Susan Gröndal, executed by Licium Studio, Stockholm. Left: Textile motifs from the northern Swedish Baltic Sea coastal city of Gävle. Print designed by Sofia Widen

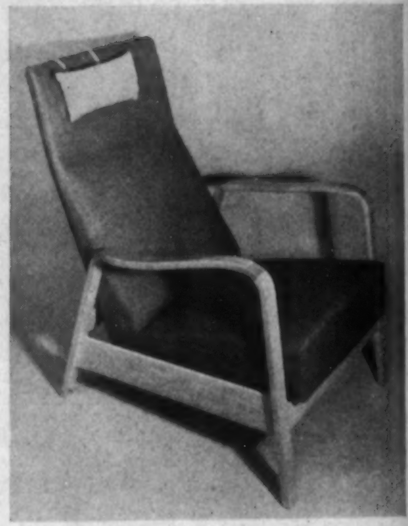


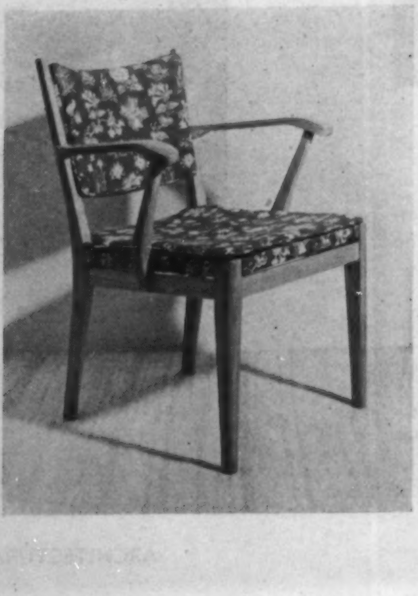
Right: "India." Curtain material in green on white by Edna Martin and made by the Mölnlycke mill

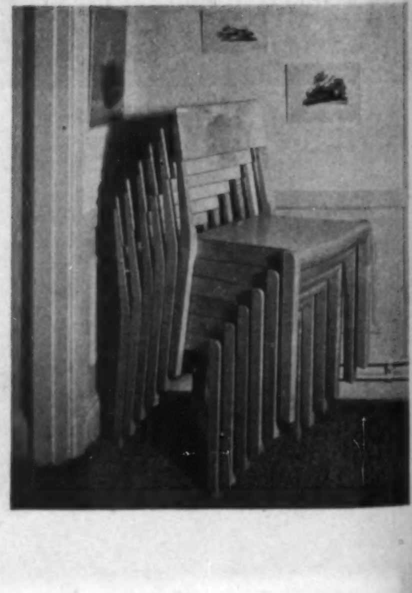
SWEDISH DESIGNERS CARRY ON IN WARTIME *(continued)*



Chairs designed by Elias Svedberg, which the Nordiska Kompaniet delivers in parts, ready to assemble with the aid of a screw driver. Textiles by Astrid Sampe Hultberg. Below: Easy chair designed and executed by G. A. Berg in Stockholm, with comfortable curve of arm rest and correct angle between seat and back. Bottom left: Chair with back and seat fabric designed by Elsa Gullberg. Bottom right: Compact nesting chairs for schools, lecture rooms, etc., designed and executed by G. A. Berg







THE HOUSEHOLD LAUNDRY

Planning Considerations

Larch C. Renshaw, A.I.A.

There is every indication that the postwar house will be planned and equipped both to add to the joy of living and to eliminate most of the drudgery. Mechanical and electrical servants will perform the household tasks. The task of providing fresh clean linens, personal and household, will be made lighter and more efficient through the well-equipped home laundry planned on the production - line principle. Therefore these Time Saver Standards which show a number of plans to meet various requirements and conditions, whether the home laundry is to be a separate room or to be combined with the kitchen, utility room or with other facilities.

LOCATION OF THE LAUNDRY

The best location is naturally convenient to other work centers, such as the kitchen, and to the drying yard, so that there will be a minimum of carrying necessary. A light, sunny, airy location can make laundering a pleasure. The day when the laundry tubs were relegated to an obscure corner of the basement has long since passed. Working in a damp, dark basement is both inefficient and depressing.

Laundering may be done in a room designed especially for this one purpose or in a combination room, sharing space with the kitchen, a recreation room, or a bathroom. Or it may be in conjunction with a canning, deep-freezing, or storage area, or with a sewing room, or with the heating and hot water services. In some southern states, installations may be in the garage or other buildings adjacent to the home.

ADVANTAGES OF A HOME LAUNDRY

Some of the advantages of a well-designed laundry in the home are:

1. Home-laundry processes prolong the life of linens and clothing, make for less frequent replacements and mending.
2. Investment in better quality linens and clothes is warranted, for they will receive the more gentle personal care of the owner.
3. Saving in cost or cash outlay which would normally go to a commercial laundry for its service.
4. Since some laundering must always be done at home, particularly if there are small children, the home laundry lightens the task of laundering fine linens, children's things, wash dresses, etc.
5. Clothes, linens, etc. cannot get mixed, lost or stolen, as they remain on the premises.
6. Clothes can be dried naturally by sun and outside air.
7. Laundry dates are determined by the housewife, not by the management of an outside agency.
8. Time saving: Important articles will be "out of use" for a shorter time, as washing can be done as often as desired. There are no delays or long waits for laundry to be returned.
9. Provision of an efficient home laundry adds to the resale value of the house, prevents obsolescence.

These advantages must be weighed against the advantages of a commercial laundry. Some of the advantages of a commercial laundry may be listed as:

1. Small charges for service can be met each week, whereas initial investment in a home laundry may seem to be prohibitive.
2. Area required by a home laundry can be eliminated or utilized for other purposes if budget is limited.
3. Commercial laundries do careful work and offer wide range of services — charging accordingly. They provide special skills and equipment not available in the home for certain classes of work, such as collars, shirts, etc.
4. It is sanitary and hygienic.
5. Special "quick service" is possible during normal times.

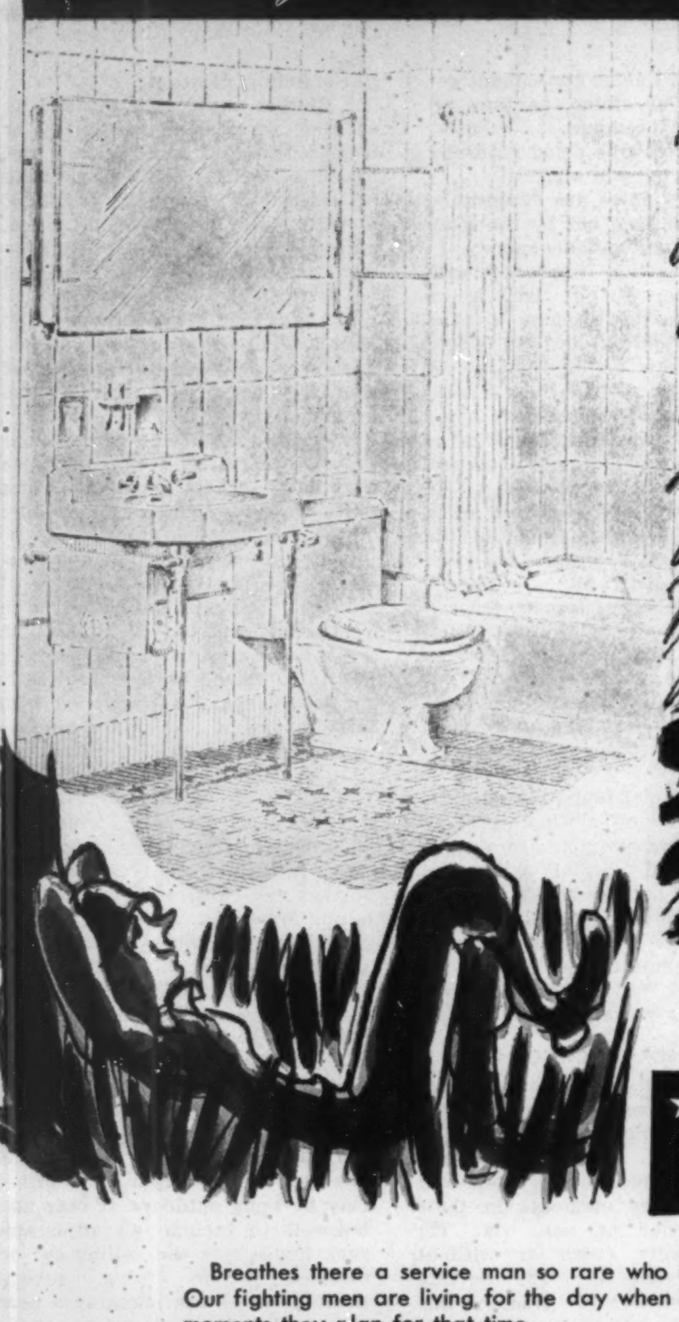
PLANNING FOR EFFICIENCY

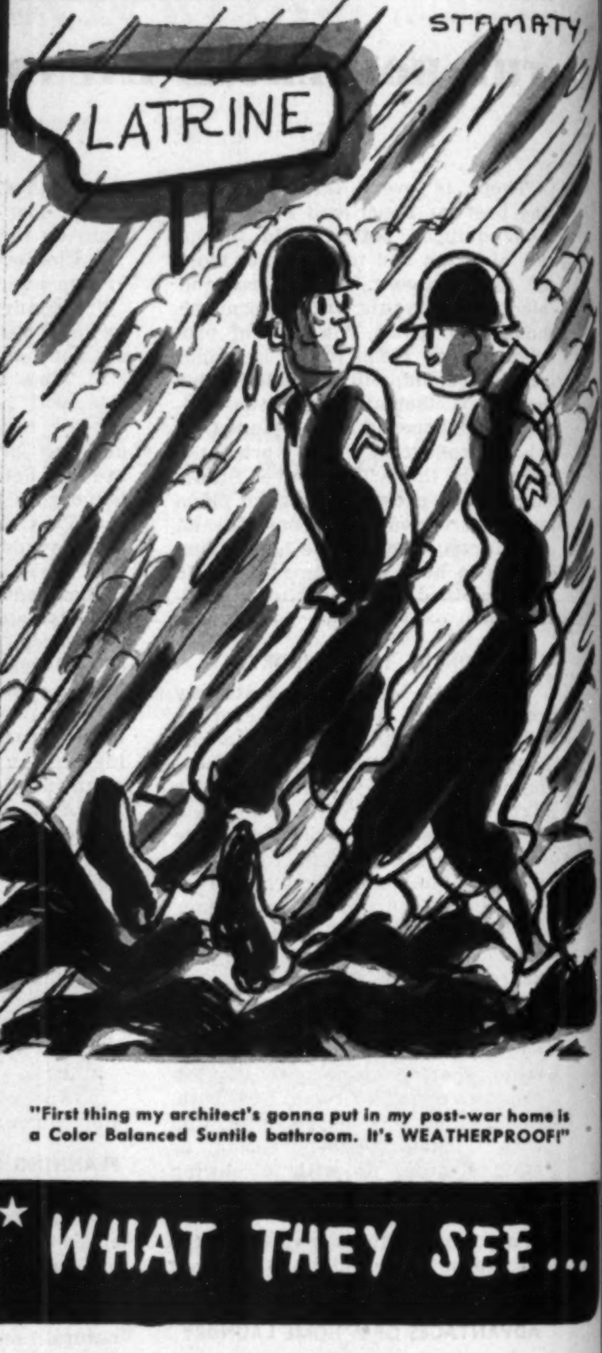
The sequence of laundering operations determine the planning of space and facilities and the placing of equipment. Convenience, time-and-step saving are easily achieved by placing the elements in their natural order of use, viz: (1) Clothes chute (with or without bins or hampers); (2) Sorting table or counter; (3) Washing machine; (4) Laundry trays; (5) Dryer; (6) Ironer or mangle; (7) Ironing board; (8) Rack, "horse" or table for finished laundry. In addition, storage closet or cabinets will be necessary for soaps, powders, bluing, bleaches, starch, basket, clothespins, iron, etc. A hot plate is usually needed for starch preparation.

The facilities and equipment to be provided are therefore:

1. **Storage closet.** With space for soaps, sewing kit, spoons, sieves, bleaches, baskets, bluing, stain removers, starch, clothespins, etc. It may be a built-in unit or a special free-standing cabinet.
2. **Clothes chute.** Should have its opening near a sorting table or counter so that clothes will not have to be handled more than necessary. It may be made of metal, metal-lined wood, wood, glass or a number of the composition materials. The chute should be vertical as curved sections are likely to cause clothes to clog the chute. The only possible curved section may be at the bottom of the chute as shown on the diagrams.
3. **Sorting table.** Should be either on casters or be a counter with bins below. There should be a hot plate on the counter for boiling clothes and starch making. If the sorting unit is of the cabinet type, it may be similar to the type of cabinet used in kitchens—with ventilated front for air circulation.
4. **Laundry tray or trays.** Or sink and tray. Should be near the washing machine and be equipped with mixing faucets. One tray should be at least 10 in. deep. The usual tray unit is about 24 in. long and 22 in. from front to back.
5. **Washing Machine.** Capable of washing and damp drying. Should be near the dryer or service door so that wet clothes may be carried a minimum distance, and may be dried either indoors or out. Postwar machines will come in many styles and types. However, to date, there is no indication that they will increase in overall dimensions. It would, however, be well for the architect to ascertain, as far as possible, the type of unit to be installed.
6. **Drying.** May be done by an electric or gas dryer, or clothes may be hung outdoors. It may also be well to include an adjustable rack hung from the ceiling for occasional indoor drying. Several manufacturers are planning a postwar radiant-heat electrical drying unit of a "tumbler" design. This type of dryer will fluff clothes and leave them soft. At least one manufacturer will combine complete drying with the washing machine equipment.
7. **Mangle or ironer.** Will require considerable space, as a work table is formed by sides which fold down when not in use. It is easily moved and may, therefore, be rolled out from the wall location when in use, if so desired.
8. **Ironing board.** Hand finishing will require provision for ironing board which can be folded into wall.

★ *What they dream about*





"First thing my architect's gonna put in my post-war home is a Color Balanced Suntile bathroom. It's WEATHERPROOF!"

★ WHAT THEY SEE...

Breathes there a service man so rare who isn't dreaming of the comforts of home? Our fighting men are living for the day when they can come home for keeps. In leisure moments they plan for that time.

Decorative, practical Suntile fits perfectly into the plans of those men dreaming of homes of their own. Suntile provides all the beauty and luxury they've missed during their war-weary years.

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Suntile
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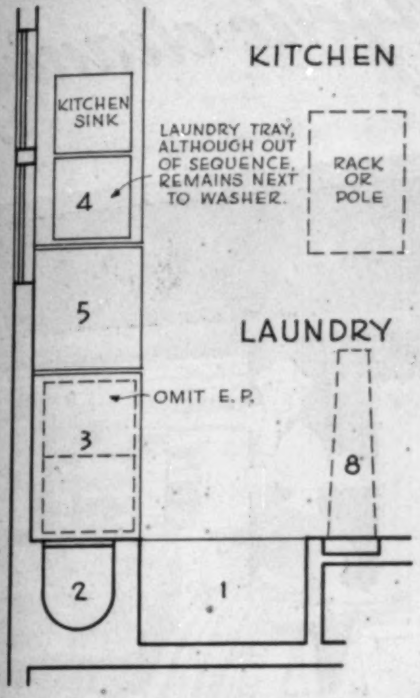
★ THIS SERIES IS BASED ON AN IDEA SUGGESTED IN LETTERS WRITTEN BY CPL. LOUIS A. PERKOVIC OF THE ARMY ENGINEERS IN THE SOUTH PAC

THE HOUSEHOLD LAUNDRY

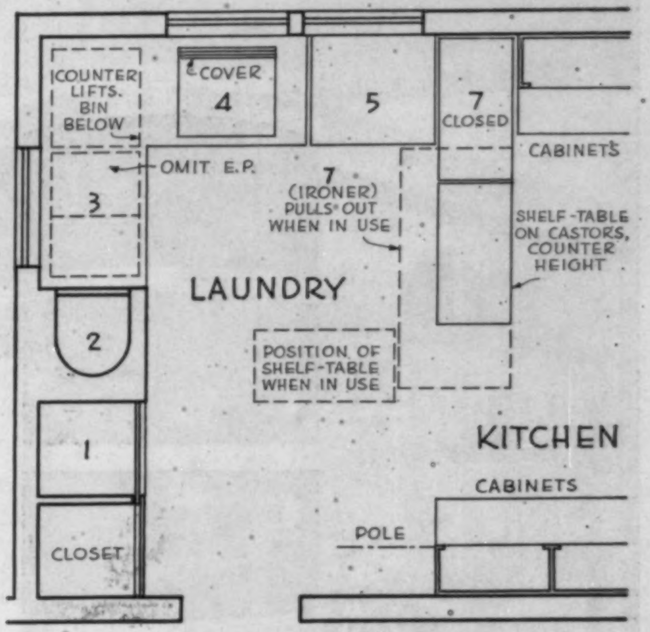
Kitchen-Laundry Plans

Larch C. Renshaw, A.I.A.

Scale ¼" = 1'0"


KITCHEN
KITCHEN SINK
LAUNDRY TRAY, ALTHOUGH OUT OF SEQUENCE, REMAINS NEXT TO WASHER.
RACK OR POLE
4
5
LAUNDRY
OMIT E.P.
3
8
2
1

A. AT ONE CORNER OF KITCHEN
MINIMUM


COUNTER LIFTS. BIN BELOW
COVER
4
5
7
CLOSED
CABINETS
OMIT E.P.
7 (IRONER) PULLS OUT WHEN IN USE
SHELF-TABLE ON CASTORS, COUNTER HEIGHT
3
LAUNDRY
2
POSITION OF SHELF-TABLE WHEN IN USE
KITCHEN
1
CABINETS
POLE
CLOSET

B. AT ONE END OF KITCHEN
COMPLETE EXCEPT FOR DRYER. NEEDS NO ELECTRIC PLATE BECAUSE KITCHEN IS NEAR.
ADEQUATE OR MEDIUM

KEY

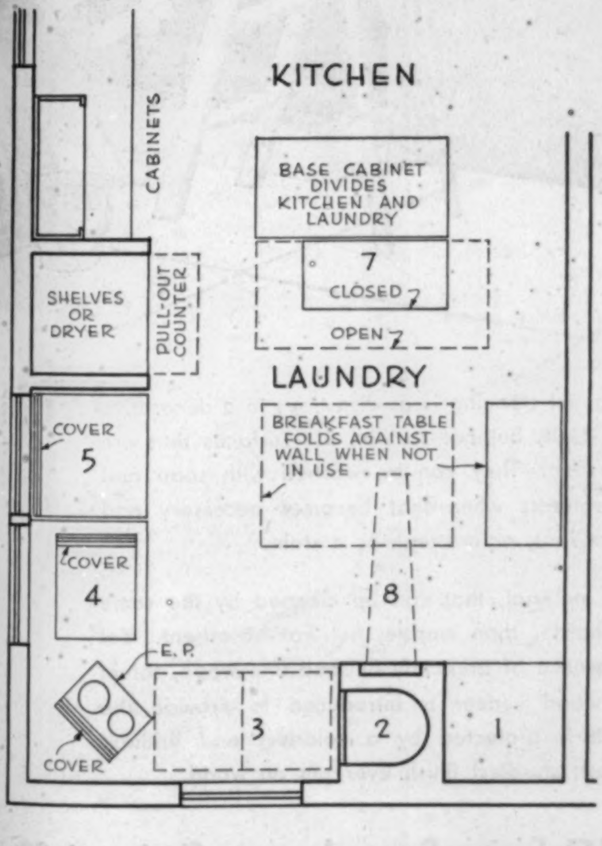
1. STORAGE CLOSET
2. CLOTHES CHUTE (VENTILATED)
3. SORTING SHELF EQUIPPED WITH ELECTRIC PLATE; VENTILATED BINS BELOW.
4. LAUNDRY TRAY WITH MIXING FAUCET AND COVER
5. WASHING MACHINE
6. DRYER (SHOULD BE VENTILATED)
7. IRONER
8. ELECTRIC IRON AND IRONING BOARD

NOTES

INDICATIONS ON PLANS PROVIDE FOR THE USUAL FLOOR SPACE REQUIREMENTS. EACH PIECE FITS INTO A SEQUENCE WHICH WILL MOST NEARLY ACCOMPLISH A "PRODUCTION LINE" EFFICIENCY IN HOME LAUNDRY WORK.

E.P. = ELECTRIC PLATE.

CHUTE EMPTIES ONTO SORTING SHELF OR INTO A BASE CABINET ADJACENT TO A BIN BELOW THE SHELF


KITCHEN
CABINETS
BASE CABINET DIVIDES KITCHEN AND LAUNDRY
SHELVES OR DRYER
PULL-OUT COUNTER
7
CLOSED 7
OPEN 7
LAUNDRY
COVER
5
BREAKFAST TABLE FOLDS AGAINST WALL WHEN NOT IN USE
COVER
4
8
E.P.
3
2
1
COVER

◆ C. AT ONE END OF KITCHEN
IMPROVED VARIATION

STANDS UP
to energetic cleaning

FORMICA

● Sometimes frequent cleaning is as disastrous to a decorative surface as wear itself, but not so with the surfaces that are finished with Formica. They can be washed with soap and water, or with solvents when that becomes necessary and there'll be nary a spot, or a streak or a stain.

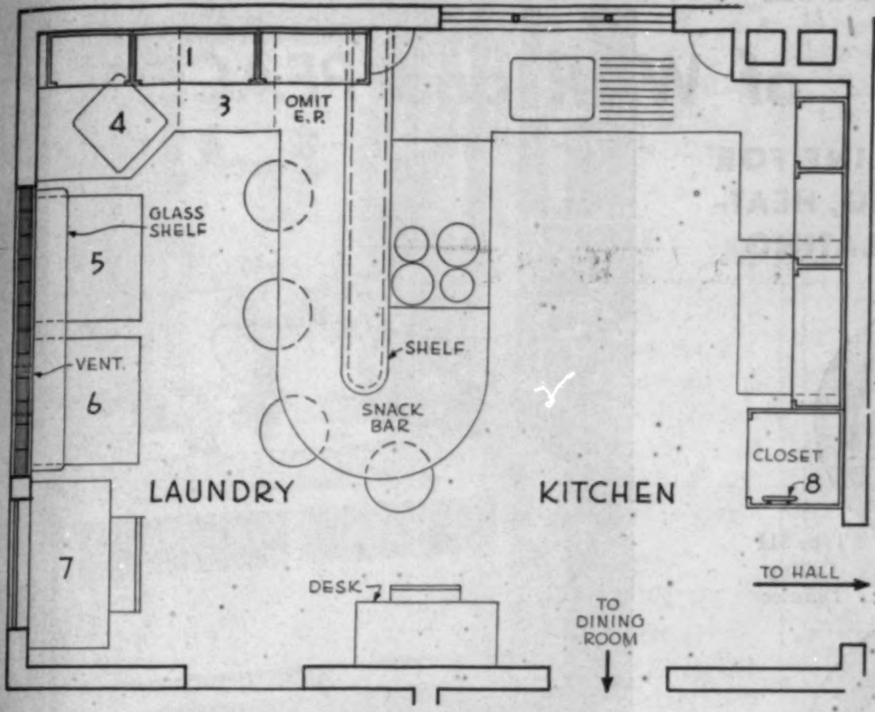
Formica is a non-porous material, that can be cleaned by the same methods as glass. It is harder than marble, but non-absorbent. Yet it may present the appearance of brilliantly finished fine wood, for in "Realwood" an actual wood veneer is introduced to provide the authentic wood grain. It is protected by a colorless and brilliant plastic film — the brightest, sturdiest finish ever put on wood.

THE FORMICA INSULATION COMPANY, 4651 Spring Grove Avenue, Cincinnati 32, Ohi

THE HOUSEHOLD LAUNDRY

A Kitchen-Laundry Plan

Larch C. Renshaw, A.I.A.

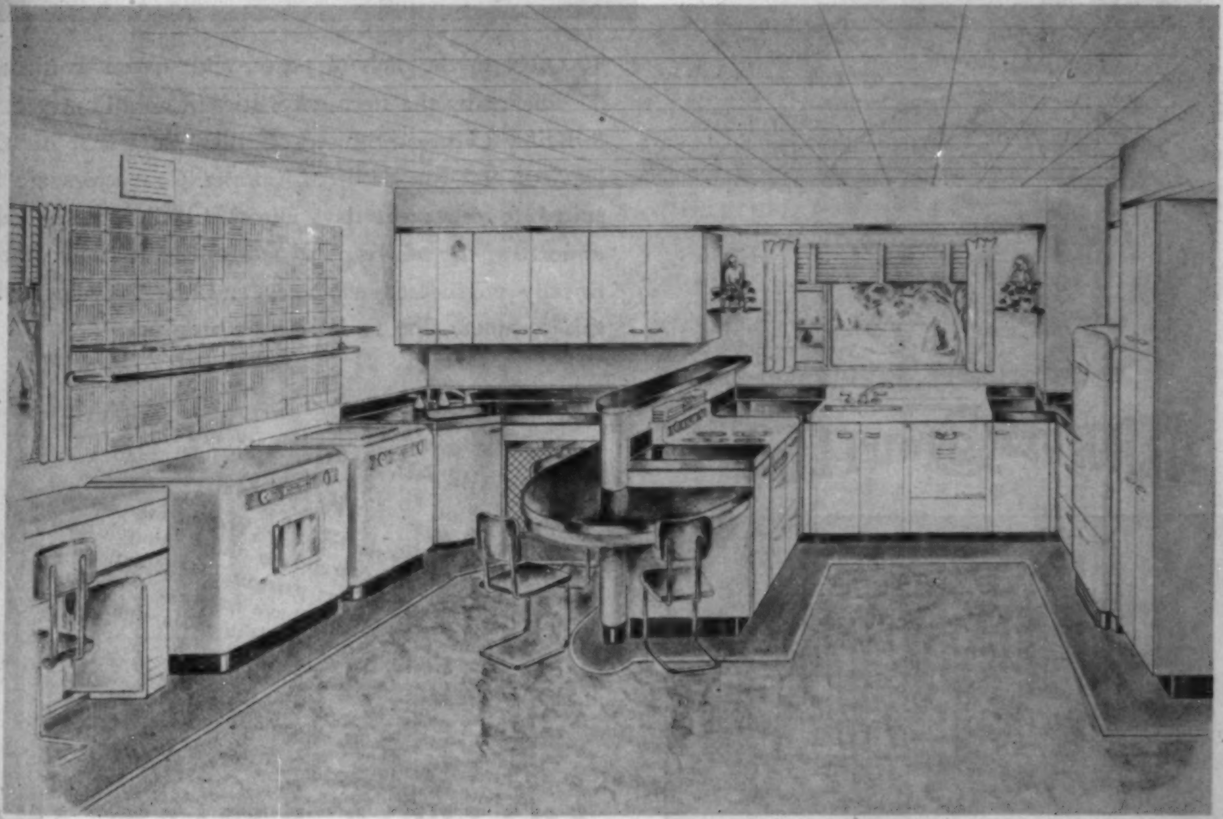

1
3
OMIT E.P.
4
GLASS SHELF
5
VENT.
6
SHELF
SNACK BAR
LAUNDRY
KITCHEN
CLOSET
8
7
DESK
TO DINING ROOM
TO HALL

KEY

1. STORAGE CLOSET
2. CLOTHES CHUTE
3. SORTING SHELF
4. LAUNDRY TRAY
5. WASHING MACHINE
6. DRYER
7. IRONER
8. IRONING BOARD

D. COMPLETE KITCHEN AND LAUNDRY LAYOUT

By courtesy of Edison General Electric Appliance Company, Inc. of Chicago, Ill.



THE KNOW-HOW of WAR and PEACE

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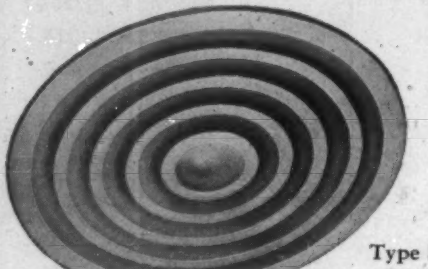
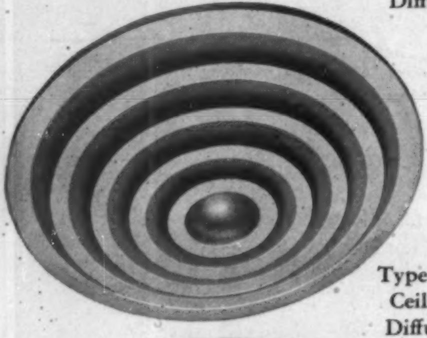
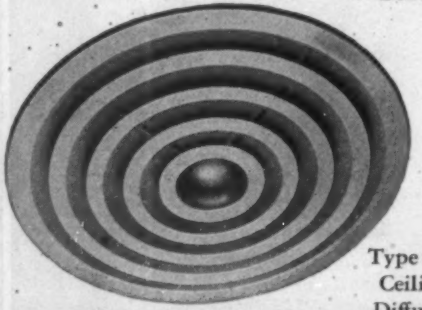
Standardized


Type S11 Ceiling Diffuser


Type E30 Ceiling Diffuser


Type E20 Ceiling Diffuser

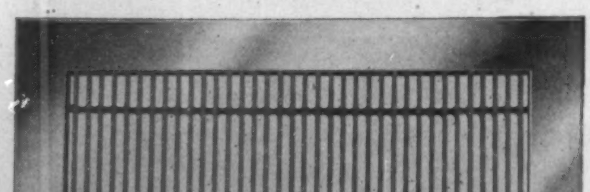
AEROFUSE ◎ OUTLET

BORN in the days of peace, and steeled to highest ef ciency by the stern necessities of an all-out war, Tuttl & Bailey Ceiling Diffusers, Grilles, Registers, Air Contr Devices and Standardized Copper Convectors are ideall suited to the great days ahead. In the dream houses o tomorrow, the new type structures of the future, the scientifically engineered efficiency and the built-in quality o this complete line finds ideal expression.

THE ALL IMPORTANT QUESTION . . .

WHEN?

Uncle Sam's the boss. Just now he asks that we devote our energies to those "must" items which require our particular skills and equipment . . . But, we have no great problem of reconversion. 'Soon as the green light flashes we can start in a hurry.


The Airline Grille is but one of over 50 efficient items for air distribution and control.

TUTTLE & BAILEY, INC.

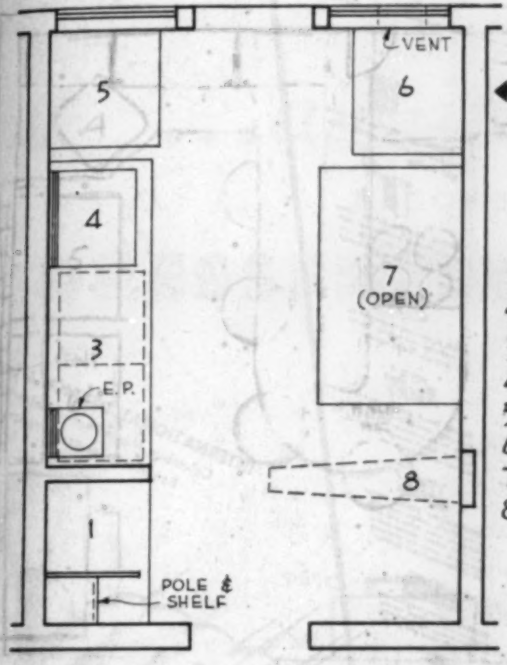
NEW BRITAIN, CONNECTICUT

THE HOUSEHOLD LAUNDRY

Separate Laundry Rooms

Scale ¼" = 1'0"

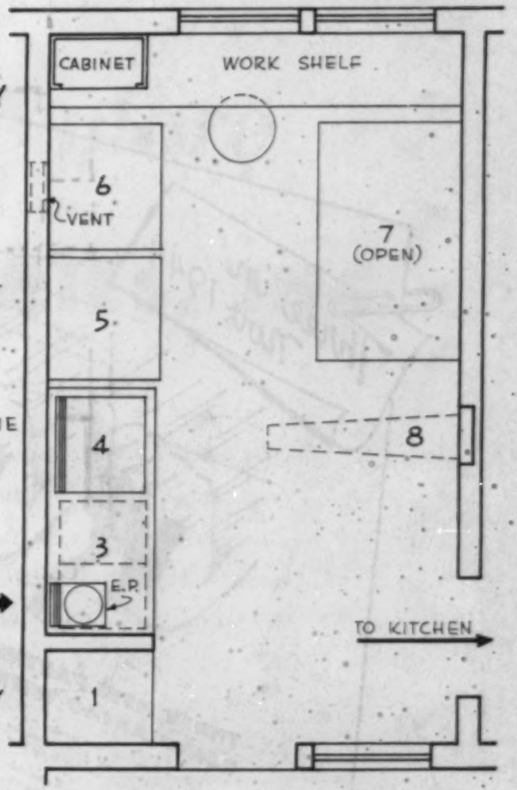
Larch C. Renshaw, A.I.A.


5
4
3
E.P.
1
POLE & SHELF
VENT
6
7 (OPEN)
8

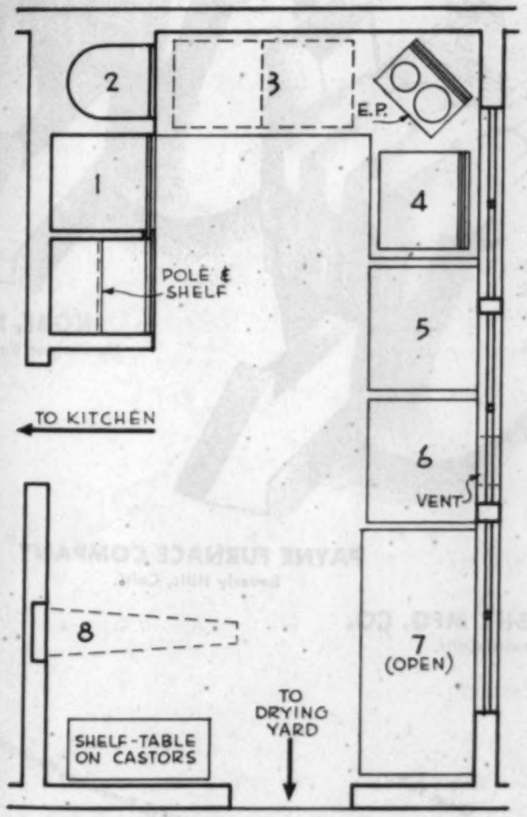
E. REAR ENTRY THROUGH LAUNDRY

KEY

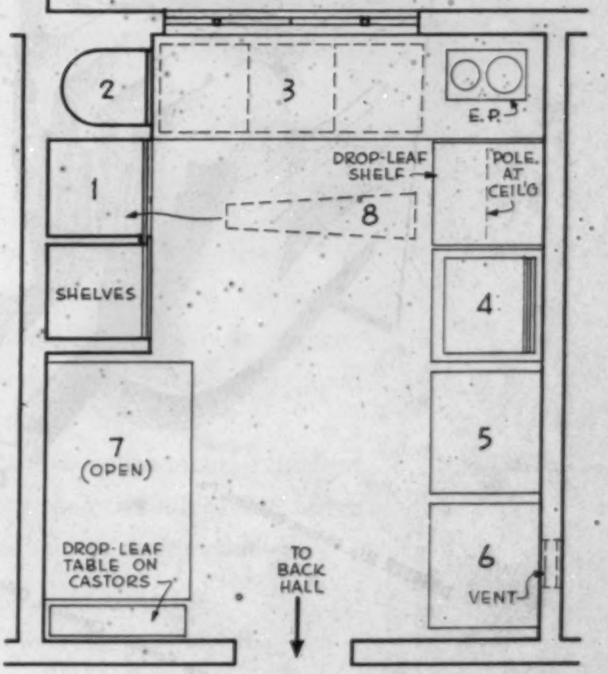
1. STORAGE CLOSET
2. CLOTHES CHUTE
3. SORTING SHELF
4. LAUNDRY TRAY
5. WASHING MACHINE
6. DRYER
7. IRONER
8. IRONING BOARD


CABINET
WORK SHELF
6
VENT
7 (OPEN)
5
4
8
3
E.P.
TO KITCHEN
1

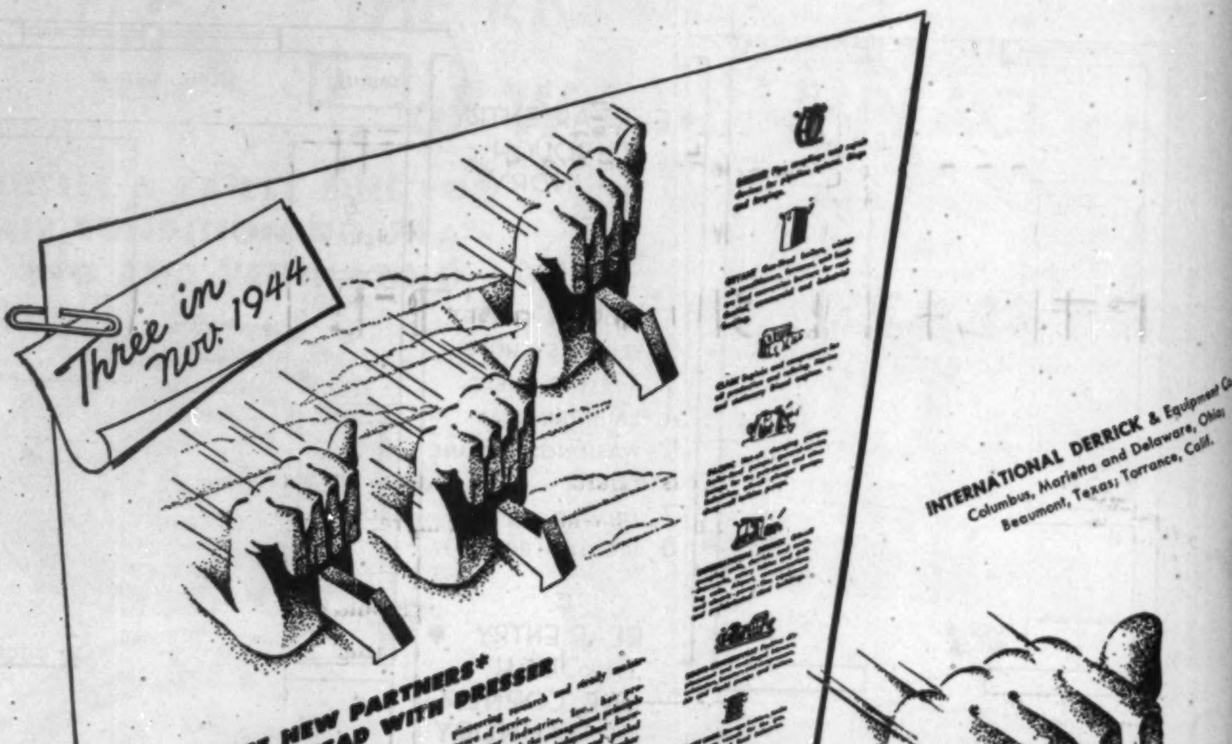
F. REAR ENTRY THROUGH ONE CORNER OF LAUNDRY


2
3
E.P.
1
4
POLE & SHELF
5
TO KITCHEN
6
VENT
8
7 (OPEN)
TO DRYING YARD
SHELF-TABLE ON CASTORS

G. NO REAR ENTRY THROUGH LAUNDRY
BETTER PRODUCTION LINE


2
3
E.P.
DROP-LEAF SHELF
POLE AT CEIL'G
1
8
SHELVES
4
5
7 (OPEN)
6
VENT
DROP-LEAF TABLE ON CASTORS
TO BACK HALL

H NO THOROUGHFARE
COMPLETE PRODUCTION LINE


Three in Nov. 1944
THREE NEW PARTNERS*
GOING AHEAD WITH DRESSER
TRIES

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Columbus, Marietta and Delaware, Ohio;
Beaumont, Texas; Torrance, Calif.

KOBE, INC.
Huntington Park, Calif.

PAYNE FURNACE COMPANY
Beverly Hills, Calif.

DAY & NIGHT MFG. CO.
Monrovia, Calif.

DRESSER Mfg. Division, Bradford, Pa.

BRYANT Heater Company, Cleveland, Ohio

CLARK Bros. Co., Inc., Olean, N. Y.

PACIFIC Pumps, Inc., Huntington Park, Calif.

...again three more

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Connersville, Ind.

STACEY BROS. Gas Construction Co.,
Cincinnati, Ohio

BOVAIRD & SEYFANG Mfg. Company
Bradford, Pa.

DRESSER Manufacturing Co., Ltd.,
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Olean, N. Y. and Cleveland, Ohio

Dresser Industries continues its growth toward more efficient, more comprehensive service to customers. Three new partners now enlarge our scope of usefulness to the gas and oil industries.

Day & Night Manufacturing Co., supplies a remarkably efficient hot water heater for the home. Payne Furnace Company is unexcelled, particularly throughout the West, for its gas-fired steel heating equipment. These two companies perfectly complement and augment Bryant Heater Company, a Dresser Industries member which for 35 years has produced fully automatic, quality gas-fired heating appliances, most extensively used in the East.

Kobe, Inc., makes an ingenious hydraulically actuated oil-well pump, a fundamental development in view of the nation's need to go ever deeper for oil. This pump dovetails with oil-well drilling and production equipment offered by two other Dresser Industries members, Pacific Pumps, Inc., and International Derrick & Equipment Company.

Dresser Industries is now a team of thirteen companies pooling their resources for better products, better service to their customers.

Dresser Industries, Inc.
Terminal Tower, Cleveland 13, Ohio

REQUIRED READING

WHEN DEMOCRACY BUILDS

By Frank Lloyd Wright. Chicago, Ill. (5750 Ellis Ave.), The Univ. of Chicago Press, 1945. 7½ by 10½ in. x + 131 pp. illus. $4.00.

A new book by Frank Lloyd Wright is always good news, even when it is, as in this case, only an expansion of a previous work. The predecessor of "When Democracy Builds" is "The Disappearing City," and the basis for argument is, of course, Broadacre City.

The entire book, Mr. Wright says, is "simply an attempt to take apart and show, from the inside, the radical simplicities of the natural city of Democracy our own machine skills have now laid open to us. There are radical eliminations essential to our own growth in the Culture of a Democratic Civilization to be made by us if we are going to have indigenous Culture and not remain the bastardized imitation of one going all the way down the Backstair to an untimely End. . . . The right kind of buildings, built the right way in the right place for the right people, and the right kind of City will build itself. I see the studied avoidance of interference by meddlers as the new 'Planning'."

It is pretty generally known by this time that Mr. Wright is almost violently opposed to public housing's neat rows of boxlike structures in which poverty is made "decent" and permanent. "The slum quarter," he says acidly, "has become an authorized state of mind, standardization of the Soul." Housing developments may be more decent than the slums, he admits, but he does not hold with keeping the poor poor, decently or otherwise. Even though "one's own way" may sink to license in filth, he concludes, there is at least some dignity in the "freedom" in which it sank. But what human dignity is there, he asks, "in the smell of soap and sanitation in these prescribed cells, in all this stupid, dull reiteration of 'no-idea' of this dreary insistence upon spiritual poverty? Even though a bathtub be incorporated and a posy stuck in some flowerbox to decorate this form of Rent for the omnipresent State?"

Rather than uninspired public housing projects in the cities, Mr. Wright would have the low income group put on the land, out where they can have fresh air and sunlight, in houses of their own which they can buy in pieces. Apparently he would have his budding homeowner start practically, albeit rather limitedly, with a bathroom. "This could be manufactured in factories and delivered to him complete in a single unit . . . ready to use when connected to the city water system and a fifteen-dollar septic tank or a forty-dollar cesspool. Well advised, he plants this first unit where it belongs. Other units similarly cheap and beneficial for other living purposes may be added soon. As months go by, the rent he saves may buy other standardized units; say a comfortable living-room and bedrooms."

When democracy builds, in Mr. Wright's opinion, everyone will have his own home, and with it an acre of ground. He is still the great prophet of decentralization — and like all great prophets, speaks with oratorical vividness and not a little philosophizing. He writes as he builds, in wholly individual terms.

A MILLION HOMES A YEAR

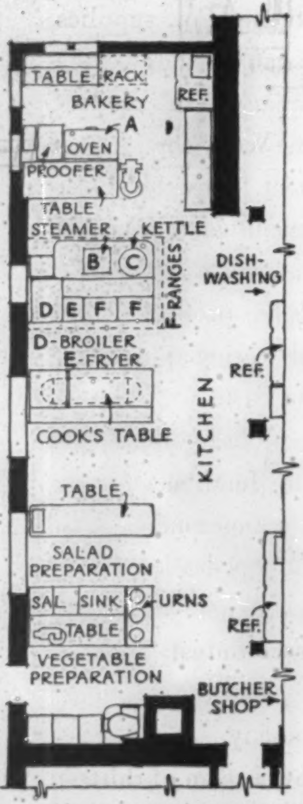
By Dorothy Rosenman. New York 17 (383 Madison Ave.), Harcourt, Brace & Co., 1945. 5¼ by 8 in. x + 333 pp. illus. $3.50.

Mrs. Rosenman's ability to think things through clearly and to present her conclusions convincingly, plus her long and close connection with the

(Continued on page 122)

KITCHEN PLAN NO. 23: Twenty-third of a series of successful mass-feeding kitchen plans.

This plan incorporates many new features in the redesign of the kitchen in a small-town hospital of 277 beds, serving 855 meals daily.



KEEP FOR HANDY REFERENCE!

COOKING EQUIPMENT USED:

(a) 909 BLODGETT GAS-FIRED BAKING AND ROASTING OVEN
(b) Vegetable steamer
(c) Stock kettle
(d) Broiler
(e) Deep fat fryer
(f) 2 Solid top ranges

Designed by:
Bernard Gloekler Corporation,
Pittsburgh, Pa.

TECHNICAL DATA
IDEAS – ADVICE
INFORMATION
CONSULT YOUR FOOD SERVICE EQUIPMENT DEALER
HE IS AN EXPERT ADVISOR AND COUNSEL

Revamping existing kitchens is frequently made much easier when one or more of the BLODGETT COMBINATION BAKING AND ROASTING OVENS are included in the plan. Their compact design and high capacity eliminate the floor space waste of older styled equipment. For details and specifications of Blodgett Ovens, consult your equipment house or write

The G. S. BLODGETT CO., Inc.

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Reprints of this new series will soon be available to architects on request.

Is There a Fireman in the House?

FIREPROOF

SHEETROCK *Fireproof* WALL *and* CEILING PANELS

WOOD GRAIN
BEVEL EDGE
TILE BOARD
WELDED WALLS

You can't build a live fireman into a house, of course. But you can build in fire protection with Sheetrock wall and ceiling panels. Sheetrock is made of gypsum, the fire-resisting mineral that cannot burn. Sheetrock panels shield the framework over which they are applied till help has a chance to arrive.

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For Building • For Industry

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REQUIRED READING

(Continued from page 120)

housing field, stand her in good stead in this book. For what she has given us here is a detailed analysis of the housing needs of the nation, both urban and rural, and the problems which the building industry must solve to meet those needs.

"The three goals to be attained," Mrs. Rosenman says, "are: to provide houses at lower cost, so as to bring them within the reach of families with income under $2,000; to provide stability of values; and to provide homes in a convenient, prosperous and pleasurable milieu."

Contrary to Frank Lloyd Wright, she holds with the opinion that there is a definite demand—and always will be—for a certain amount of centralization, that some people will want to live in the country and others will prefer to live in the city. Furthermore, she says shrewdly, the years immediately following the war are sure to bring a high demand for rental housing because many men and women will have to change their places of employment once hostilities cease, and thus, in spite of their wartime savings, will be unable to buy or build their own homes immediately.

Incidentally, Mrs. Rosenman goes pretty thoroughly into the pros and cons of home ownership. We hope this part of her book will somehow be broadcast to the general public; what she says could go a long way toward preventing the purchase of homes by those not qualified financially or otherwise to make such purchase.

Mrs. Rosenman's goals throughout this book are high, but they *are* attainable, as she proves again and again. She makes no statement that she cannot back up—from population and income statistics and trends to methods for meeting her three main housing goals. To sum up, this is a carefully thought out, highly readable and stimulating book.

THE BUILDERS OF THE BRIDGE

The Story of John Roebling and His Son. By D. B. Steinman. New York 17 (38 Madison Ave.), Harcourt, Brace & Co., 1945. 5½ by 8 in. illus. $3.50

Despite its title and subtitle, this biography is really the story of a bridge—of Brooklyn Bridge, that venerable and still lovely span joining Brooklyn and downtown New York. It was the bridge which inspired Dr. Steinman to write the book; and it was the bridge which turned him to a career of bridge engineer and made the intelligent writing of the book possible.

Starting back in 1806 in the ancient walled town of Muhlhausen in Thuringia (that same Muhlhausen which only recently has featured in the advance of our armies across Germany), the story tells the whole history of John August Roebling and his son, Washington Augustus, who between them conceived and built the Brooklyn Bridge. John Roebling's early life in Germany, his emigration to America and his years of farming and colonization in Pennsylvania form the background of determination and stick-to-itiveness which brought his boyhood dreams to realization. What he started he finished, *malgré tout*. Having decided to come to America and to found a colony here, he carried the plan through, eventually even laying out the little town of Saxonburg in Butler County, Pennsylvania. "Following Roebling's surveys and plans," Dr. Steinman records, "the village was laid out on a hillside, with one broad Main Street on the top of the ridge, running exactly east and west. This was flanked by lots running down a half mile to

(Continued on page 124)

The Friendly Floor

Friendly—warm and safe and dry, though you step on it barefoot in bedroom or bathroom.

Friendly—resilient and non-tiring, though you walk on it endlessly in offices and shops, or throughout your home.

Friendly—lovely patterns of golden tans and nutty browns blending gracefully with every decor, with all that's fine and beautiful.

Kencork is the friendly floor you'll always be proud of, always be thankful for. For thirty years these wonderful cork tiles have been proving that no other material can match the comfort, beauty and durability of cork underfoot. Kencork isn't available today but will be made again—we hope soon. Meanwhile, plan for tomorrow by studying the interesting Kencork folder issued by the company that introduced cork floor tiles in 1899. Write to David E. Kennedy Inc., 71 Second Avenue, Brooklyn 15, N. Y.

KENCORK
the friendly floor

Thousands OF WOMEN ARE WAITING FOR KITCHENS LIKE THIS

Increases in requests for the St. Charles literature—for kitchen plans—and actual orders placed in advance, show the mounting interest in postwar St. Charles Steel Kitchens. St. Charles leadership in kitchen design and construction will be more pronounced than ever.

Our new designs have many striking improvements—nothing fantastic—but features kept practical and usable by the broad experience of St. Charles kitchen craftsmen. They consist of improvements in construction, a new finish of extra luster and long life, handsome new hardware; adjustable shelves in all cabinets; wall cabinet depth increased to 12¾ inches; and additional special-purpose units and convenience accessories such as sliding shelf in base cabinet, tray-storage cabinet, new design cup rack, lid and tin file; mirror behind cabinet door and many others.

These are additions to the already extensive variety of standard and special units and accessories. They make it possible to fit the dimensions of any room, or suit the needs and tastes of any home owner with a truly custom-built arrangement—postwar kitchens delightfully efficient, yet strikingly beautiful and durable.

WRITE for folder, literature and further details for your files. St. Charles Mfg. Co., 1649 Dean Street, St. Charles, Illinois.

THE NEW *Peninsular* KITCHEN

Shown here is one of many forward-looking new kitchens introduced by St. Charles. The projection of sink and range work centers into the room saves wall space. It permits the use of a glass side-wall or extra-large windows—also full-height cabinets against one wall, greatly adding to storage capacity. Design eliminates most square corners. The basic arrangement is adapted to enlargement or reduction to suit the needs of any home.

91% PREFER STEEL

According to Survey of Users

A recent survey of homes and apartments equipped with St. Charles kitchens showed that 91 per cent preferred kitchens of steel. Of the remainder, half were undecided, not having had previous experience with other materials. The three leading reasons given were:

(1) Easy to clean
(2) No warping
(3) Finer appearance

These are facts to remember when consulting with clients regarding kitchens in new or remodeled homes.

St. Charles CUSTOM BUILT *Steel Kitchens*

REQUIRED READING *(Continued from page 122)*

Water Street, so that each man had a little farm of six to twelve acres to himself. Main Street thus became the center of community life."

With Saxonburg safely on its own feet at last, Roebling turned back to the engineering for which he had been trained. After a number of disappointments and a good deal of work on canals, river improvements, portage railways and surveys, he won his first recognition with his development of wire rope—and inadvertently founded a thriving young industry. That alone is a fascinating story of ingenuity and persistence.

From then on Roebling's career was assured. In rapid succession came the suspension aqueduct over the Allegheny River at Pittsburgh, the Monongahela bridge at Pittsburgh, the Delaware River aqueduct at Lackawaxen (built in 1848 and still in use as a highway bridge today), and the great railway suspension bridge at Niagara which brought him world acclaim.

Meanwhile Washington Roebling had been growing up. Following in his father's footsteps, he went to Rensselaer Polytechnic Institute and by 1857 was ready to join his father in the building of still another bridge at Pittsburgh—the Allegheny. After four years of military service in the Civil War, during which he built bridges quite "on his own," and two years as assistant to his father on the Ohio bridge at Cincinnati, Washington was ready for his share in the great bridge which was to prove the culmination of his own life work as well as of his father's. For John Roebling lost his life as the result of an accident during the early stages of the building of Brooklyn Bridge, and Washington Roebling, taking up where his father had left off, was invalided at 35 by the caisson disease contracted while preparing the foundations of the bridge.

Washington Roebling had inherited not only his father's genius, however, but his determination as well. From his bed, with the assistance of his wife, he supervised the completion of the bridge, and from his window eleven years later he watched through field glasses the dedication of his father's dream and his own life work.

BABEL'S TOWER

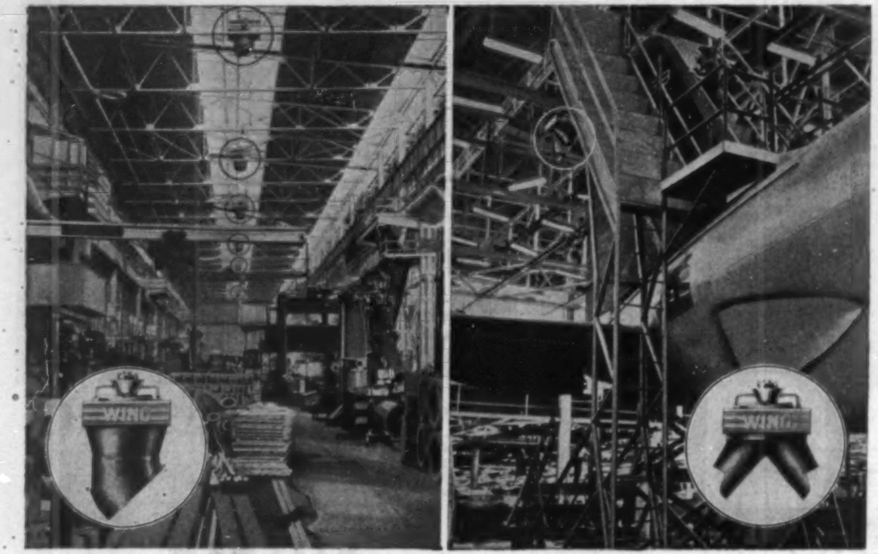
The Dilemma of the Modern Museum. By Francis Henry Taylor. New York 27 (Morningside Hts.), Columbia Univ. Press, 1945. 5 by 7¾ in. 53 pp. $1.00.

The art museums of America, Mr. Taylor says (and, as director of New York's Metropolitan Musuem of Art, he should know) have reached a point where they must make a choice of "becoming either temples of learning and understanding in the Geneva sense, or of remaining merely hanging gardens for the perpetuation of the Babylonian pleasures of aestheticism and the secret sins of private archaeology."

Museum architects will want to read this delightfully written, informal essay on the place of the museum in modern society and its function in the postwar years, for, as Mr. Taylor points out, many of the largest museums in the country are planning "gigantic physical changes" for after the war.

"Any building is essentially less important than the idea behind it," Mr. Taylor says. "We have all heard the constant clamor for more space. But space means money. To be sure, many of our museums are desperately overcrowded and they need to be overhauled and reorganized. But this overhauling, if it is to be effective, must be intellectual as well as physical. Otherwise we shall simply produce a new set of alibis at so many dollars a cu. ft.

(Continued on page 126)



WING *Revolving* HEATERS

Help Keep Shipbuilders (Sea and Air) on the Job

Two striking instances of the virtues of Wing Revolving Unit Heaters are exemplified in the photographs above.

At the left is one of the shops of a large shipbuilding concern where the **Wing Revolving Heaters are located 61 feet above the shop floor.** Yet the heated air is projected down to the working level and circulated by the **slowly revolving outlets of the heater** so that every part of **this huge shop (802 ft. x 156 ft.) is kept warm and comfortable,** protecting the health of workers and keeping vital shipbuilding production moving.

At the right is part of the assembly shop of one of the world's largest builders of cargo planes, the future merchant ships of the air. This modern plant is also heated by **Wing Revolving Unit Heaters. No other type of heater could so thoroughly and evenly heat a plant of this kind,** where the massive planes would form imposing obstacles to the projection of heated air from fixed discharge heaters. But the slowly moving streams of warm air from the revolving discharge outlets of the Wing heaters **circulate around and under the huge plane bodies, wings, rudders, stabilizers, etc.,** and keep the plant at a uniform, comfortable temperature. Employees find that the sensation of warm, live, invigorating comfort is stimulating to production. **And in summer, with the steam turned off, and the fans on, an equally pleasant cooling effect may be obtained.**

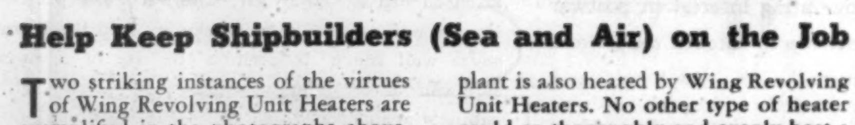
Write for a copy of Wing Bulletin HR-4

Wing

L. J. Wing Mfg. Co.,

151 W. 14th Street New York 11, N. Y.

Factories: Newark, N. J. and Montreal, Canada



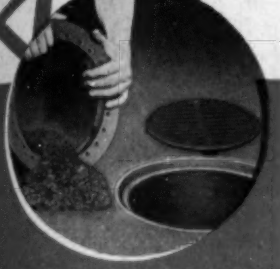
THIS DROP OF WATER ~~IS~~ was THE *dangerous one!*

IT might have LEAKED OUTSIDE THE DRAIN . . . INSIDE THE BUILDING

Josam

NON-CLOG *Triple Drainage* DRAINS

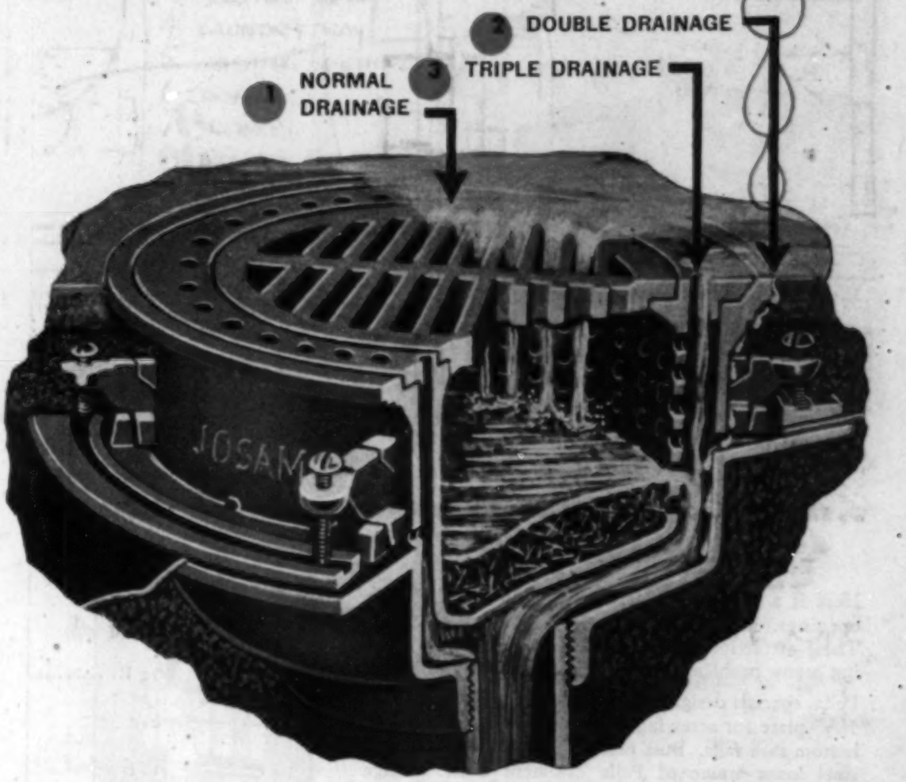
PROVIDE COMPLETE PROTECTION AGAINST FAULTY DRAINAGE



Sediment container removed for cleaning

Strainer cannot be replaced without sediment container being in place—no chance of forgetting to put it back

Sediment container in place, strainer fits properly into position



There is no other drain that offers the protective drainage feature of the Josam Non-Clog Triple Drainage Drains. Their "three-way" performance not only assures continuous, uninterrupted floor drainage in spite of accumulated debris, but also positive protection against leakage. Sediment container intercepts debris, allowing clear water to flow into drain line (normal drainage). If water seeps into floor around drain, it is returned directly into drain line . . . does not spread into floor or walls (double drainage). Even if sediment container becomes filled with debris, drainage continues through holes in auxiliary rim, signalling need for cleaning (triple drainage). Besides, as illustrated at left, the features of this drain are a positive guard against carelessness in cleaning and replacing sediment container. Don't shorten the life of the buildings on which you are working by taking chances with floor drains that do not have these exclusive features. Give them added years of life and service by specifying Josam Non-Clog Triple Drainage Drains every time!

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Founded 1914

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City ____________________ State ____________________

REQUIRED READING

(Continued from page 124)

BUILDING TODAY

By Martin S. Briggs, F.R.I.B.A. New York 11 (114 Fifth Ave.), Oxford Univ. Press, 1945. 5½ by 8½ in. 112 pp. illus. $2.00.

This little book, the author explains, was written "primarily for those who have not yet embarked upon their careers or decided what those careers shall be." In other words, it is a sales talk for the profession of architecture, and what it does is to explain the whole building field from the men who do the planning to styles of architecture, materials and specific types of building. Written by an Englishman, it is concerned chiefly with British likes and dislikes, customs and needs, but because of its simple and direct approach it will have a definite appeal for architects, students and the general public everywhere. Its chief virtue is its concise summation of a subject that is often made too technical and obtuse.

ANN ARBOR CONFERENCE

Papers Presented at the Second Ann Arbor Conference on Architectural Design and Practice. Ann Arbor, Mich., Univ. of Mich. 8½ by 11 in. 52 pp. mim.

Speakers at the Ann Arbor meetings last February, whose papers are here published, included: Joseph Hudnut, dean of the Graduate School of Design, Harvard University; William W. Wurster, dean of the School of Architecture, Massachusetts Institute of Technology; Roy Childs Jones, head of the School of Architecture, University of Minnesota; George Howe, Deputy Commissioner for Building and Construction, Public Buildings Administration; George B. Brigham, Jr., associate professor of architecture, University of Michigan. Dean Hudnut's paper was reprinted in ARCHITECTURAL RECORD (March, p. 70).

What these men and the other conference speakers have to say on such things as "Design in Practice" (Wurster), "Objectives in Design" (Jones), "The Relation of the Architect to Government" (Howe), and "Prefabrication" (Brigham), will be of decided interest to all architects.

A few copies of this booklet are available to those interested. Requests should be addressed to College of Architecture and Design, 207 Architecture Bldg., Ann Arbor, Mich.

YOU AND YOUR NEIGHBORHOOD

A Primer for Neighborhood Planning. By Oscar Stonorov and Louis I. Kahn. New York 17 (230 Park Ave.), Revere Copper & Brass, Inc., 1944. 10⅞ by 8½ in. 92 pp.

With pictures and a minimum of text, this primer analyzes a neighborhood's needs: safe streets, a modern grade school, public park and playground, a neighborhood house, a nursery school, a "teen-age building," a shopping center.

Continuing in the same graphic manner, the booklet then shows Mr. Citizen how to go about getting these things—the organization of a neighborhood planning council and its *modus operandi*.

Messrs. Stonorov and Kahn have done a fine job of selling the need for planning to the layman. Anyone who comes across this booklet will want to follow its advice and get to work.

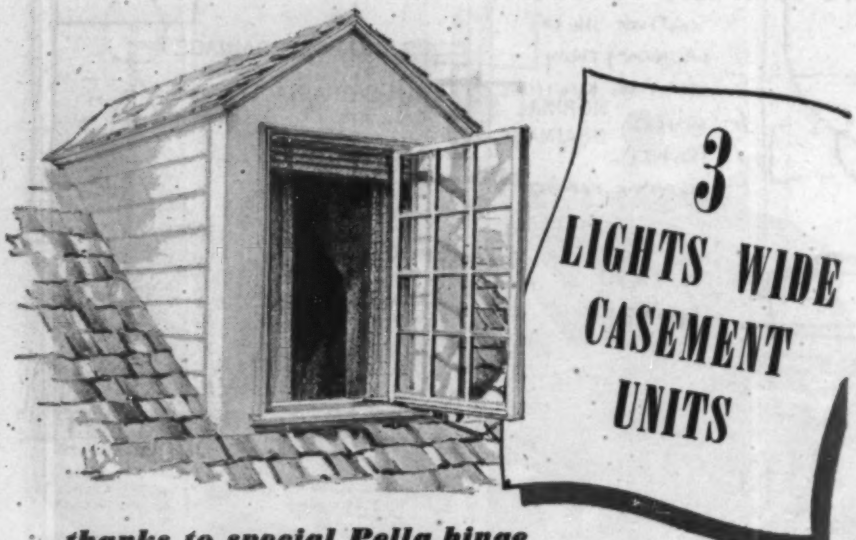
CITY PLANNING

LINCOLN, NEBRASKA

Planning for Lincoln. By Lawrence E. Hovik. Lincoln, Neb., The Lincoln Chamber of Commerce, 1945. 8½ by 11 in. 37 pp. mim.

Including a brief history of Lincoln and an analysis of its population trends, this study presents a long-range plan

(Continued on page 144)



. . thanks to special Pella hinge design and rigid steel frame

Here is a line of casement units with full 28" sash openings. Heights run from 2' - 4½" up to 4' - 5¼". These attractive stock-size units are helpful in solving many problems of design and proportion.

Pella special design hinges provide an extra long 5½" plate for screwing into the solid wood top and bottom sash rails. Butt plate is *riveted* to the welded steel inner frame of Pella casement units. Hinge extends to allow washing from inside. Tamper-proof when closed. A special mortise and tenon sash joint gives greater gluing surfaces. Joints are also steel-dowelled. Sash is made from genuine White Pine full 1¾" square and toxic-treated. Pre-war installations have demonstrated these 3-light wide Pella casements to be thoroughly practical on all counts.

PELLA 3-LIGHT WIDE SASH easily supports weight of 300 lb. man without springing sash "out-of-true."

ROLSCREENS — the original roller-type inside screens. The ultimate in screen efficiency and convenience.

DUAL GLAZING—a single panel type that mounts on inside of sash. Inconspicuous. Easily removed for cleaning.

Free FOR YOUR FILE!

22 separate pages of scaled Pella casement details for all types of installations. Send for your FREE set today. Write: ROLSCREEN COMPANY, Dept. E-55, Pella, Ia.

Pella CASEMENT WINDOWS

Made by makers of Famous Pella ROLSCREENS and Pella VENETIAN BLINDS

ASBESTOS IN ACTION
HIGH, WIDE and HANDSOME!

Designed, built and erected by Byrne Doors, Inc., Detroit. Apac Sheathing installed by the Faulkner Construction Company. (Official U. S. Navy photograph.)

. . . and SAFE because it's sheathed with "Century" APAC

THE striking architecture of this Navy Blimp hangar is its own tribute! The doors are like skyscrapers . . . 120 feet high . . . 220 feet wide . . . weighing 300 tons. And they must open the entire width of the hangar in TWO MINUTES.

These giant portals must be the masters of wind and weather—for failure to open and close quickly might spell the doom of a wind-tossed Blimp. So they are completely sheathed with "Century" Apac—K&M's low cost asbestos-cement sheet material. It is rot-proof, rust-proof and fire-resistant.

In thousands of industrial plants, K&M "Century" Apac is used for roofing and siding, office paneling, sheathing in machine shops and stock rooms, linings for elevator casings and shower stalls. It is ideal for new construction, repairs or plant additions.

Enormous quantities of "Century" Apac have gone into wartime jobs. YET NOW THERE'S PLENTY AVAILABLE FOR YOUR INDUSTRIAL CONSTRUCTION WORK . . . without delay, without restrictions.

Check these "Century" APAC advantages for construction and renovation work

1. Made of Asbestos Fibre and Portland Cement
2. Pleasing light gray color
3. Fire resistant and durable
4. Convenient size—4' x 8', 4' x 9' and 4' x 10'. (Three thicknesses—3/16", 1/4" and 3/8".)
5. Low cost
6. Rat and termite proof
7. Easy to cut, handle and apply
8. Fastens with nails or screws
9. Practically no maintenance required
10. Prompt delivery

ARMY E NAVY

K&M best in asbestos

Nature made Asbestos

Keasbey & Mattison have been making it serve mankind since 1873 . . . with products like "Century" Apac, "Century" Asbestos Corrugated and Flat Lumber, Ebonized Asbestos, High Temperature Insulations and others. Interested in modern Asbestos and Magnesia materials? Write!

KEASBEY & MATTISON
COMPANY • AMBLER • PENNSYLVANIA

THE RECORD REPORTS

(Continued from page 12)

"The plan not only will help to guard against over-building and under-building of dwellings," he said, "but also will enable builders to determine with greater accuracy what size and types of housing are needed in the immediate future."

Advance Planning Needed

Advance planning of postwar construction projects must be speeded up if the building industry is to provide its full share of employment for returning veterans and other workmen during the first year after the end of the war, according to Russell G. Creviston, chairman of the Council's Postwar Committee.

"Reports from varied sources indicate that the volume of construction which actually has reached the planning stage is well below the $15 billion level which should be ready to start by the time unrestricted civilian construction again is permitted," Mr. Creviston said.

"Some of the planning has been unavoidably postponed because the individuals and organizations responsible for it are devoting their full efforts to the war program, but much of the needed postwar building could be advanced to the blueprint stage at this time without interrupting war production and without depriving war industry of essential technical services."

Dimensional Coordination

A large percentage of the building products placed on the market after the war will be produced in the new modular sizes adopted as part of the movement to reduce the cost of construction by coordinating the dimensions of the many individual parts used in completed structures, Tyler S. Rogers, chairman of the Council's Technical Committee predicts.

The Council held a series of meetings in major cities throughout the country last month for discussion of dimensional coordination now proceeding through Project A62 of the American Standards Association, of which the A.I.A. and the Council are joint sponsors.

The presentation was made by A. Gordon Lorimer, Chief, Bureau of Architecture, Department of Public Works, New York City, under whose direction various postwar projects are being designed on the modular coordination basis. It was illustrated both with slides and with panels showing the layout of masonry units, including brick and clay tile, concrete masonry units and glass block, and their coordination with metal and wooden windows. The meetings were held in Minneapolis, Chicago, Milwaukee, St. Louis, Indianapolis, Louisville, Cincinnati and Cleveland.

INDUSTRY REFORMS URGED

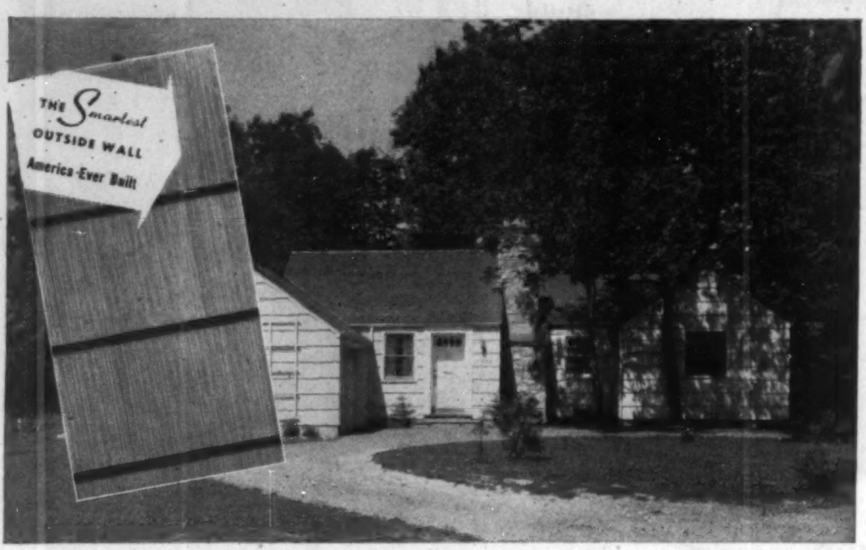
Declaring that the building construction industry must put its house in order to help carry our cherished democratic way of life to a brighter and better future for all its citizens, Jerrold Loebl, president of the Chicago Building Congress, presented to the annual meeting of the Congress an eight-point program of reform:

1. Establish a research institute to study building materials, tools, merchandising and prefabrication processes.

2. Encourage home building companies able to create large well-planned neighborhood communities.

3. Support creation of a national mortgage discount bank system to provide long-term low-cost financing facilities.

(Continued on page 130)



CREO-DIPT Double-Wall

Zephyrs

Zephyrs are deep textured red cedar shingles pre-stained by Creo-Dipt in beautiful colors . . . easily and quickly installed over the underwall of moisture resistant *Zephyr Insulation Backing Board*.

Charm and distinction are combined with superior durability and insulation qualities in this new *Zephyr Double-Wall Method*.

For a portfolio of photographs showing other attractive homes, and full information for Architects, write Creo-Dipt Company, Inc., General Offices: North Tonawanda, New York. SEE OUR CATALOG IN SWEET'S 8b/7.

CREO-DIPT

Shingles and Stains

CREO-DIPT
SHINGLE STAIN

Back home we turn night into day with it!

Deep into many Arctic regions, electricity is being carried for the first time in history, thanks to Laytex-insulated wire.

Yes, worldwide war has subjected Laytex to many new conditions — not only freezing cold, but tropic heat, moisture, and shattering shock — greater strain and wear than any single wire was ever meant to withstand . . . to a degree far beyond what was expected.

Right now, the entire output of Laytex Wires and Cables is required for military needs. One day, Laytex will be once more available for Residential and Commercial Buildings, Police and Fire Alarm Systems, Communications, Signalling, Power, Control, and other exacting services.

Listen to "Science Looks Forward"—new series of talks by the great scientists of America—on the Philharmonic-Symphony Program, CBS network, Sunday afternoon, 3:00 to 4:30 E.W.T.

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THE RECORD REPORTS

(Continued from page 128)

4. Revise building codes so as to include desirable new methods and materials.

5. Abolish labor production restrictions which result in high cost, and establish a fair wage policy.

6. Examine prevailing mortgage finance practices and policies which tend to impede progress in building construction.

7. Adopt an advanced and progressive outlook on urban planning.

8. Employ all the means possible to effectively abolish slum and blighted areas and prevent future slums.

STORE MODERNIZATION

The overwhelming majority of America's shoe stores will be modernized after present restrictions are lifted, according to a survey of shoe retailers just completed by *Boot and Shoe Recorder.* Replies to a recent questionnaire on store appearance and redecoration indicated that 79.4 per cent of store owners and managers are planning improvements to meet postwar competition.

Most of those considering a new store front preferred simple modern style, and chose glass and metal as the most popular materials. In planning new lighting systems, 40.4 per cent preferred fluorescent lights, and 11.4 per cent cast their votes for indirect lighting.

As for new interiors, the majority of the retailers answering the questionnaire preferred visible over concealed stocks, although 33.1 per cent of those concerned with women's stores voted for concealed stocks.

NHA NOTES

Title VI Insurance Resumed

The FHA has notified its field offices to resume issuance of commitments to insure loans on houses built for war workers.

This phase of FHA operations was suspended early in February when the insurance authorization under Title VI of the National Housing Act neared exhaustion. Its resumption was in accord with Congressional approval of an amendment to the Act which extends its war housing insurance powers until July 1, 1946 and adds $100,000,000 to its Title VI authorization.

Fuel Preservation Plan

The FHA in anticipation of short supplies of fuels during the winter months of 1945-46 has announced renewal for the third year of its "Summer Plan" for insured-financing of installations to conserve fuel through prevention of heat losses. Under the plan the first payment on FHA-insured loans made during the spring and summer for this purpose may be deferred until fall.

A WAY TO HELP

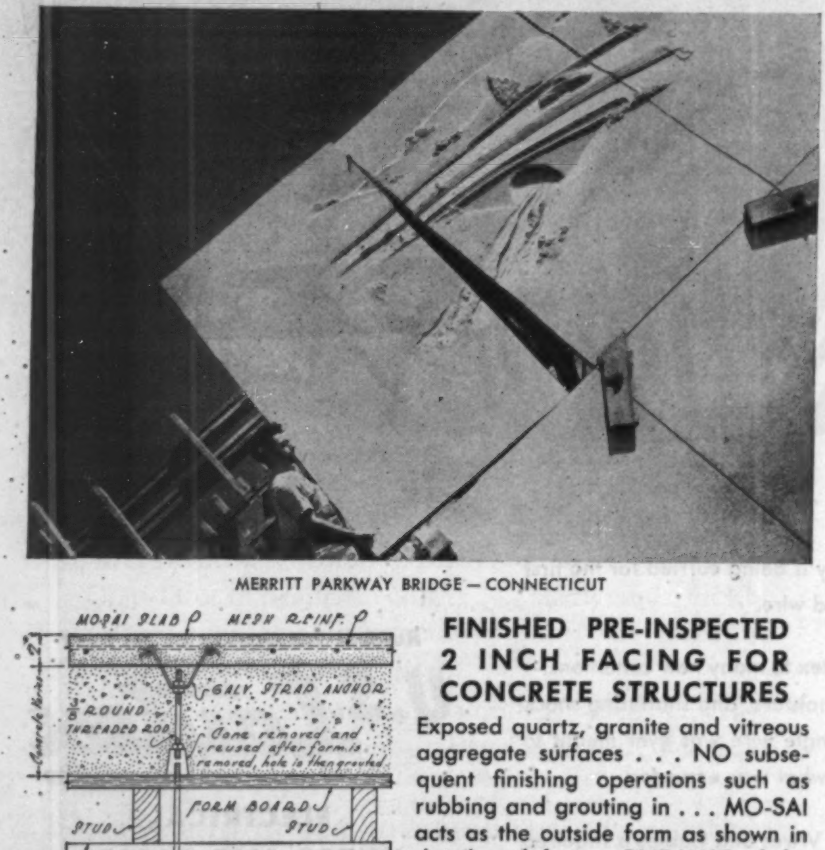
From the April Bulletin of the Boston Society of Architects comes an interesting suggestion for architects.

Robert B. George, architect, of Oakham, Mass. reports that for the past four or five months he has been going to the Cushing General Hospital once a week "trying to help the boys with their future . homes, garages, hen houses, etc." He says that there is "a great opportunity for the architectural to put over an educational program and, also, at the same time help these poor fellows when they get back into civilian life. A lot of these boys are going to lose their shirts if they get into the hands of fly-by-night contractors. Real estate dealers are going to sell them worthless lots, etc., etc.

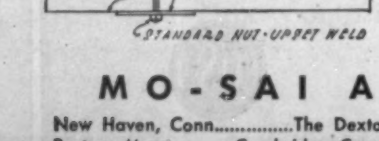
(Continued on page 132)

Mo-Sai REG. U.S. PAT. OFF.

ARCHITECTURAL SLABS



MERRITT PARKWAY BRIDGE — CONNECTICUT



FINISHED PRE-INSPECTED 2 INCH FACING FOR CONCRETE STRUCTURES

Exposed quartz, granite and vitreous aggregate surfaces . . . NO subsequent finishing operations such as rubbing and grouting in . . . MO-SAI acts as the outside form as shown in detail on left . . . ONE-HALF of the slab thickness effective structurally.

See our catalog in SWEET'S.

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DON'T LET PAST PRACTICES TIE YOUR HANDS BEHIND YOU!

Eliminate costly and unnecessary maintenance problems with our scientifically compounded PARA-PLASTIC. Your experience and our products can work miracles! Seal friendships with permanence! Specify SERVICISED PARA-PLASTIC and say with utmost confidence and finality, IT IS FINISHED! "Yes, Mrs. Jones, the initial cost was slightly higher but the best is cheapest in the long run".

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Architects recommend it.

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Now Let Us Recommend that YOU send for your SAMPLE

AVOID LEAKY ROOF PROBLEMS

The ordinary asphalt roof has never satisfactorily solved the problem of providing a watertight seal at such critical points as flashings, skylights, wall copings, and around chimneys. Continual maintenance and replacement costs are a constant source of dissatisfaction for owners, architects and builders. Why, in this age of plastics, should science turn a deaf ear to the constant cry for a better material, a lasting product, an honest performance, an assured permanence?

THE ANSWER IS *Para-Plastic*

the SERVICISED WONDER PRODUCT! Compounded by our chemists and engineers, it produces A MIRACLE SEAL of character, honesty and distinction, with ability to perform its proper functions and a multitude of credits to its name. PARA-PLASTIC does far more than was originally expected of it but most important of all it SEALS and RE-SEALS! When separated and reunited it actually heals, hence the MIRACLE SEAL.

Send for Sample

We realize it is unbelievable and hard to convince by words alone. Therefore we have made up a quantity of various types of samples in actual application. We invite you to send in for your convincing proof of this miracle sealer. When you receive your sample it will have been sealed for weeks, but break or pry it apart by force—then press the pieces together firmly, and you will witness the re-seal, the healing quality of MIRACLE SEAL.

USES of PARA-PLASTIC

Sealing-Compound for watertight joints around Chimneys, Coping, Flashing, Sky-lights, Swimming Pools, Shower Stalls, etc.

Expansion and Contraction joints in concrete construction

Adhesive for waterproof flooring

Dampproofing of concrete foundations

You are invited to consult with our Engineering Department on any of your Water-proofing Problems. See our catalog in the forthcoming Sweets Architectural Files. Send for our free literature.

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6051 West 65th Street, Chicago, Ill.

THE RECORD REPORTS *(Continued from page 130)*

In spite of the fact that architects will never see these men when they are ready to build, some good sound advice at this time will do a lot to make the general public conscious of what an architect does."

SMALL HOMES BULLETINS

Two more in the University of Illinois Small Homes Council's series of bulletins have been issued: "Heating the Home" (No. G3.1), and "Solar Orientation" (No. C3.2). Single copies are free on request.

Advantages, disadvantages, problems and operation of air, water and steam home heating systems are explained in the 12-page non-technical circular on heating. Diagrams and discussions of a number of systems are included.

The second pamphlet explains what solar orientation is, and by means of diagrams and illustrations shows how it works.

Courtesy Metropolitan Museum of Art

Pulpit of El Hospital Church, Quito, Ecuador. From "Architecture of the Andes" exhibit opening at Metropolitan Museum of Art, New York, on May 9th

SCHOLARSHIPS

The College of Architecture and Design of the University of Michigan has announced that two Arthur C. Tagge Scholarships of $325 each may be awarded again this year.

Candidates may be students in architecture, landscape architecture, painting or design, and shall have been in residence in the College for at least one semester. Preference will ordinarily be given to advanced students.

The scholarships will be awarded for the fall term of 1945-46. Awards will be made only if the qualifications of applicants are considered adequate. Application should be made before June 1, 1945 to the Office of the Dean, 207 Architecture Bldg., Ann Arbor, Mich.

AWARDS ANNOUNCED

Awards in the recent Pittsburgh Plate Glass-*Pencil Points* architectural competition have been announced as follows: first prize, Jean Bodman Fletcher and Norman Fletcher, Birmingham, Mich.; second, I. M. Pei and Frederick G. Roth, Princeton, N. J.; third, Ralph Rapson, Chicago, Ill.; fourth, Eduardo Fernando Catalano, Cambridge, Mass.

ENGINEERS' READING LIST

A revised "Reading List for Junior Engineers" has been issued by the Junior Committee on Professional Training of the Engineers' Council for Professional Development, and is now available for distribution.

(Continued on page 140)

BARBER-COLMAN

TEXAS RESTAURANT

This coffee shop in the Hotel Baker at Dallas was remodelled, redecorated, and modernized as shown in the picture above. New equipment included the attractive flush type VENTURI-FLO Ceiling Unit with standard lighting fixtures added. The size and spacing of these units was selected so as to provide draftless air distribution and uniform temperature throughout the room, for optimum comfort conditions and most pleasurable dining.

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CEILING OUTLETS FOR GUARANTEED AIR DISTRIBUTION

Data based on complete tests enable us to recommend exactly the right outlet for any condition and GUARANTEE results. You are assured of uniform, properly diffused air of the desired temperature at specified level, with required air movement and elimination of hot, cold, or drafty areas. Use ENGINEERED AIR DISTRIBUTION — see your Barber-Colman representative.

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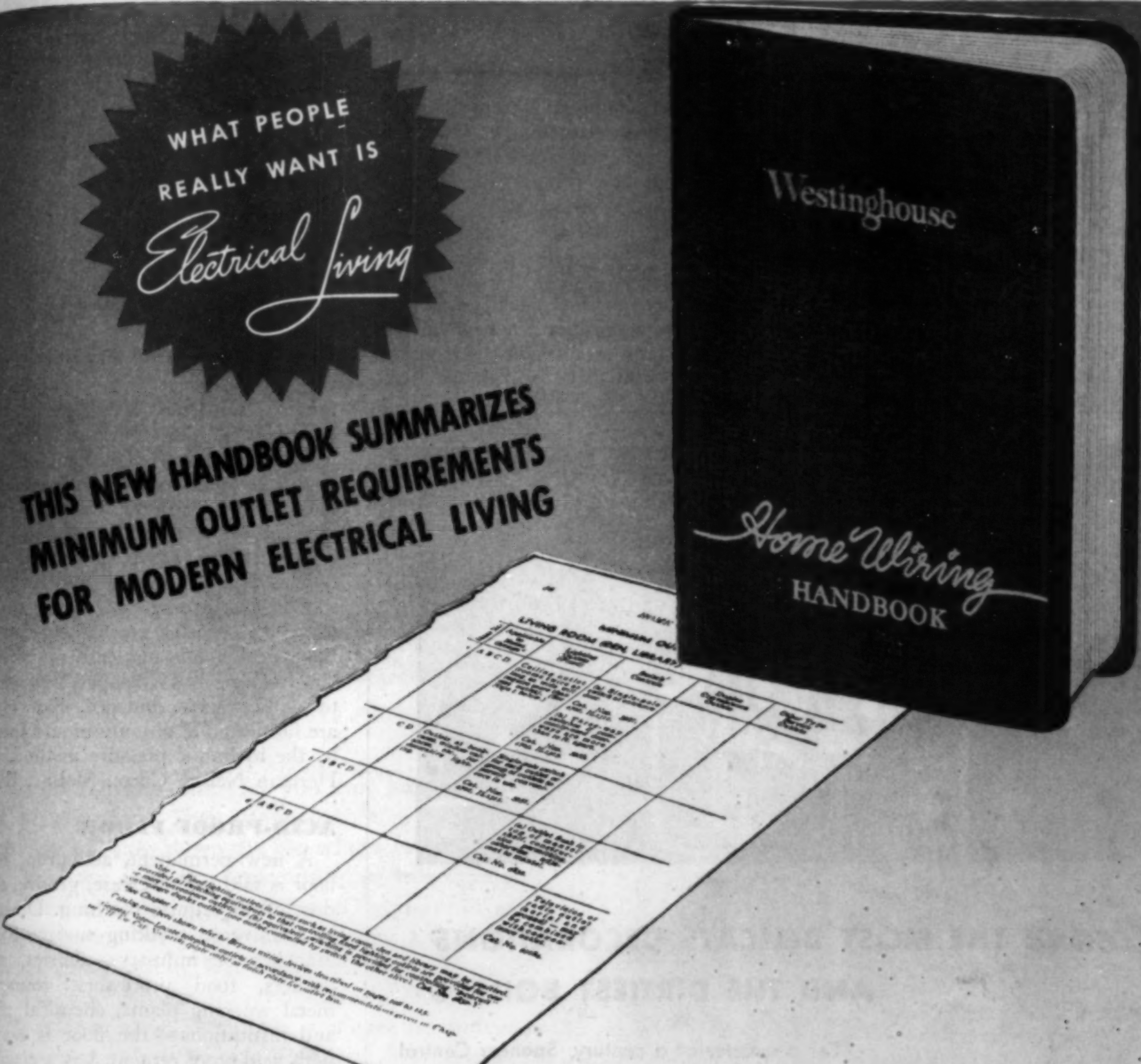

THIS NEW HANDBOOK SUMMARIZES MINIMUM OUTLET REQUIREMENTS FOR MODERN ELECTRICAL LIVING

Room by room, for each of four groups of homes in the popular priced class, the minimum outlet requirements are clearly outlined in this new Home Wiring Handbook.

For example, by referring to Chapter III you can quickly specify the correct number, type and location of fixed lighting outlets, switch controls, duplex convenience outlets and other service outlets to install. Every electrical wiring detail required in homes for full convenience Electrical Living is explained and summarized in the same comprehensive, concise way. Control centers, feeders, circuits, circuit protection, signal systems, and facilities for telephone and radio are included.

Every architect, engineer, builder, prefabricator and electrical contractor in the housing field will value this timesaving, 120-page guide to what people really want, electrically.

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as a part of its consulting service to the home building profession, offers the following FREE BOOKS: Electrical Living in 194X—Professional Edition; Manual of Better Home Wiring.

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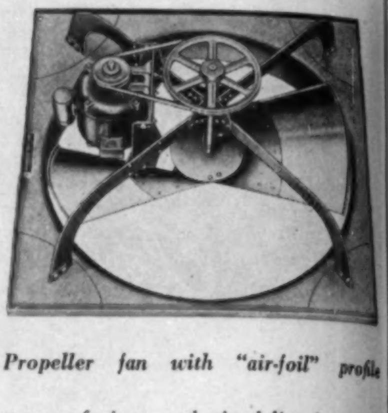
FOR BETTER BUILDING *(Continued from page 20)*

culator, a control panel, a thermostat, and a control valve. In operation the boiler water is maintained at a constant temperature and the pump runs continuously. Unless the control valve is opened, the water circulating continuously through the piping and radiators does not pass through the boiler. When room temperature drops below the required degree, the thermostat causes the control valve to open, admitting hot water from the boiler into the circulating system. When the room temperature is restored to normal, the control valve closes and cuts off the boiler from the rest of the system. Hoffman Specialty Co., 1001 York St., Indianapolis 7, Ind.

PROPELLER FAN

Developed for industrial, commercial and public applications, a new line of propeller fans is available with either direct or belt drive and in a wide range of sizes and air deliveries.



Propeller fan with "air-foil" profile

The most important exclusive feature, according to the manufacturers, is the "air-foil" profile with the pitch increasing toward the hub. This "air-foil" profile section, it is claimed, not only increases efficiency and permits quieter operation but minimizes undesirable overloading tendencies characteristic of propeller fans. The peripheral edge of the blade, also incorporating an "air-foil" profile, is flanged backwardly to reduce air turbulence. Fan blades are fabricated of aluminum and formed by the hydraulic pressure method. The Herman Nelson Corp., Moline, Ill.

ACID-PROOF FLOOR

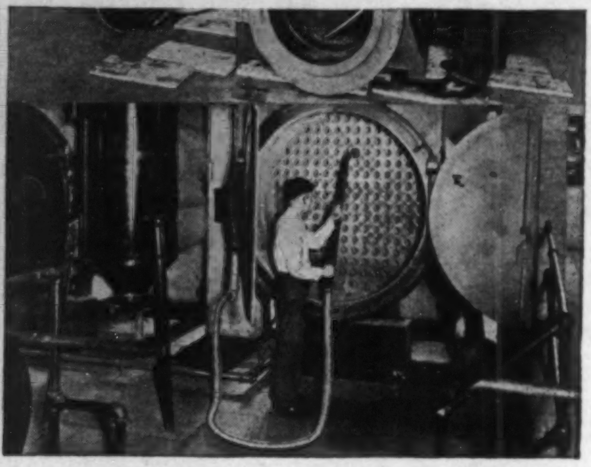
A new permanent, acid-proof brick floor is said not to crease, groove, chip, dust off or require patching. Designed as a universal working surface for all branches of industry — dairies, meat packers, food processors, foundries, metal working plants, chemical plants and institutions — the floor is bonded with acid-proof cement, has a crushing strength of 18,500 lb. to the sq. in. Furnished with smooth or non-skid surfaces. The Belden Brick Co., Canton, Ohio.

PRINTER-DEVELOPER

Designed to provide simple, economical and efficient printing and developing facilities for those who require black and white prints in medium quantities, a new *Model 41 Printer-Developer* combines individual printing and developing units in a modern cabinet with a sturdy, all steel frame of box girder construction.

The Model 41 has a printing speed range up to 6 ft. per minute, depending on the transparency of the original, printing either roll stock or cut sheets. The light source is a 2,000-watt glass mercury vapor lamp within a 6-in. diameter cylinder. A new method (patent applied for) of cooling pulls air into and through the cylinder and contact bands, resulting in minimum machine temperature. Charles Bruning Co., Inc., 4754 Montrose Ave., Chicago 41, Ill.

(Continued on page 136)



Cleans THE MOST DELICATE DECORATIONS AND THE DIRTIEST BOILERS

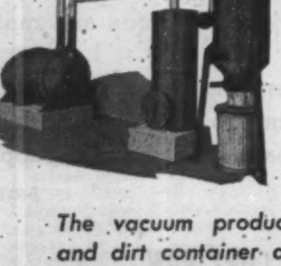
For a quarter of a century, Spencer Central Vacuum Systems were installed primarily to clean floors.

Special tools, easily manipulated on all kinds of floor surfaces, backed up by powerful vacuum, resulted in faster, better cleaning at lower ultimate costs.

In the meantime, other uses have become dominant in the minds of architects and building superintendents. Spencer cleans radiators, filters, and boiler tubes, and often saves its cost on these items alone in a few years.

In every kind of building it does something special—an extra dividend at no extra cost. In schools, its chalk trays; in theatres, projection machinery; in hotels, rugs; in stores, its displays, and in hospitals, dry mops.

Let us give you reasons why Spencer Vacuum Cleaning will result in a better cleaned building at less cost in the long run.



The vacuum producer and dirt container are located in the basement. Piping connects to convenient inlets all over the building.

SPENCER VACUUM
HARTFORD
CLEANING
THE SPENCER TURBINE COMPANY, HARTFORD 6, CONN.

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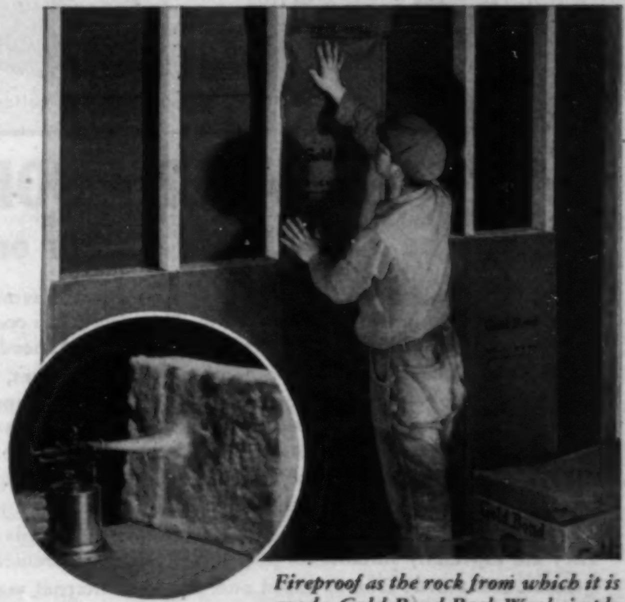
"Fire-retarding" materials can MAKE A SWELL FIRE!



Fireproof as the rock from which it is made, Gold Bond Rock Wool simply can't burn.

ALMOST any material you can name is "fire-retarding". Even a newspaper dropped on a bonfire will slow down the blaze for a moment. That isn't to say that fire-retarding materials shouldn't be used in home construction. They have a very real function for framework, exterior and interior finish, and flooring. But when, for the same money or less, you can get fireproof materials for wall and ceiling insulation, why take a chance on materials that are merely "fire-retarding"?

In homes, fires often spread rapidly because the space between the 2x4's acts as a flue. In spite of the usual fire stops, flames can leap from basement to attic in a matter of seconds. This can be prevented when full-thick fireproof insulation is used.

When you specify Gold Bond Rock Wool, your client is getting insulation that is fireproof—permanently fireproof—not merely fire resistant or fire retardant. It is made by one of the country's largest manufacturers of building materials, and is furnished in the newest type blankets and batts in all standard sizes and thicknesses. You will find the full line of 152 Guaranteed Gold Bond Products described in Sweet's.

National Gypsum Company, Buffalo 2, N. Y.

POST-WAR NEWS! Revised building codes in many cities will insist on home insulation that really adds fire protection. Gold Bond Rock Wool meets these exacting requirements.

BUILD BETTER WITH GOLD BOND

WALLBOARD • LATH • PLASTER • LIME • METAL PRODUCTS • WALL PAINT • INSULATION • SOUND CONTROL

FOR BETTER BUILDING

(Continued from page 134)

CABLE CLAMP

Patent rights on a new quick-acting, all purpose cable clamp have been issued to the Glenn L. Martin Company in the name of its inventors, James J. Pasela and E. Stanley Knockel, machine shop employees in the Martin engineering laboratory. The device makes it possible to measure accurately the load of any cable, avoiding damage at the crimped point and a consequent false breaking point.

Suggested by the old seafaring trick of looping a rope around a capstan, the new invention features a dual pulley whose diameter is such that tension on the cable is relieved and the clamp bears only a small part of the strain. Additional feature is an automatic locking bolt, an ingenious scissor mechanism consisting of two cross slots so arranged that the pull of the cable urges the locking bolts into a firm clamping position at the ends of the cable. The self-locking bolt replaces fully 12 hand adjusted bolts found in previous types of cable clamps.

DRIP-STOPPER

A pliable, cork-filled tape called *No Drip Tape* is said to stop immediately drip from cold water pipes. Forming a sealed jacket around the pipe, the tape is quickly and easily applied without tools or experience. Said to be ideal for pipes 1 in. in diameter and smaller. J. W. Mortell Co., Kankakee, Ill.

COLOR CONDITIONING

A postwar program for scientifically "color conditioning" industrial interiors has been announced by the Du Pont Finishes Division following extensive study of employing functional color to improve employee efficiency, health, comfort and morale.

Described as the science of determining the correct industrial color environment for maximum vision, the system has been developed by Du Pont in collaboration with Faber Birren, industrial color authority. The "color conditioning" technique is designed to protect employees against eyestrain by reducing glare and eliminating extreme contrasts between light and dark. It recommends restraint in using color, especially distracting, overstimulating hues, as well as abolishing light-robbing dark areas.

The announcement emphasized that the program, although designed to introduce more color into the industrial scene, is not mere "interior decoration" of plants, but the outcome of long-term research that already has done much toward "putting color to work" for industrial efficiency. Hundreds of case histories based on color installations in all types of plants were compiled and studied. Only a few colors in combinations need be used, the studies show.

LAMINATED WOOD BOW

Development of a laminated wood bow which has successfully replaced steel in the roof construction of their automobile house trailers, is announced by The Schult Corp., Elkhart, Ind.

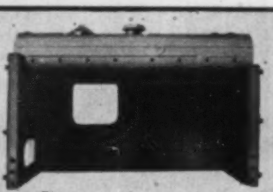
The new roof bow is constructed of 24 laminated birch strips, resinous bonded and formed in special heat treated presses. Advantages claimed for it are that it will not warp, contract or expand, but is constant in size, and contributes to a material reduction in the weight of the trailer.

SEALING COMPOUND

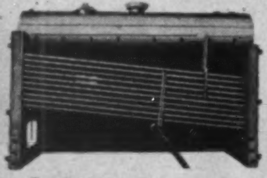
A recently developed plastic sealing compound for waterproofing and sealing joints of all types, *Para-Plastic,* is said to remain flexible and pliant, and to retain indefinitely its holding power

(Continued on page 138)

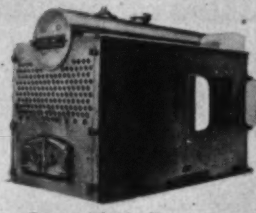
Type KD knocked-down for shipment.



First step in erection.



Second step in erection.



Erected in boiler room.

A "FUEL-SAVER" BOILER
that can be carried thru a Door or Window

Type KD heating boiler is shipped "knocked down" permitting the parts to be carried through a door or window. This eliminates costly cutting and patching of building walls, reduces boiler outage and speeds reconversion.

The Type C, twin section, is a heating boiler in halves, for installation where Type C one piece cannot be carried through existing passages. The only erection work is the bolting together of the two halves.

For years, International's "Fuel-Saver" Type C heating boilers have fulfilled the requirements for low cost heating in office and apartment buildings, hotels, schools, theatres, industrial plants, etc.

"Fuel-Saver" Boilers have cut heating costs in thousands of installations. They are especially suitable for post-war heating requirements providing—
QUICK STEAMING: Due to rapid and positive internal water circulation.
MAXIMUM HEAT ABSORPTION: Due to effective distribution of heated gases.
EASE OF CLEANING: Due to accessibility of heating surfaces.

Complete range of standard sizes rated in accordance with S.H.B.I.—15 lb. A.S.M.E. Standard—for hand, stoker, oil or gas firing.

Every International Representative is a competent boiler man able to assist in solving heating problems.

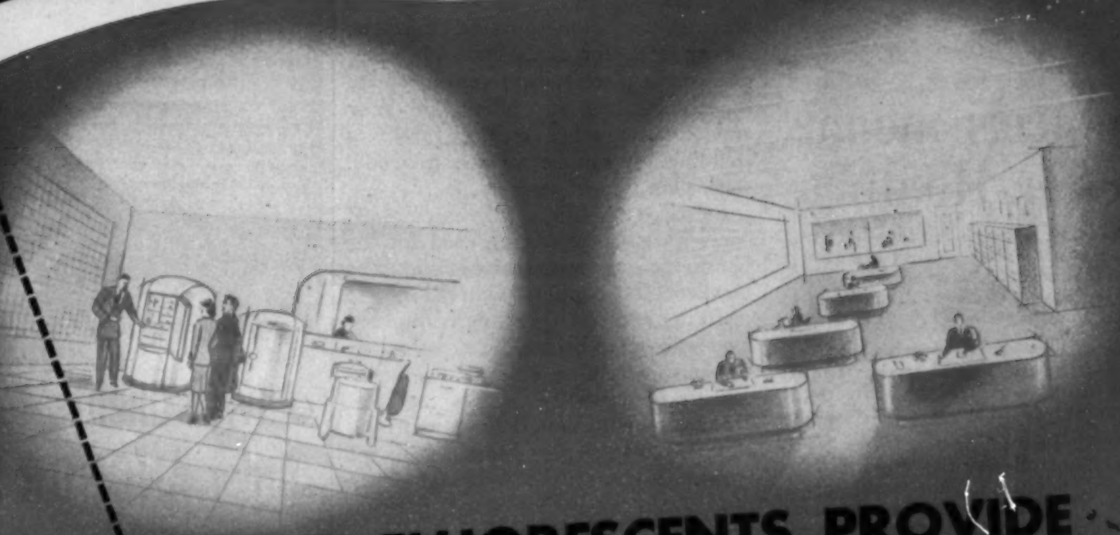
Write for bulletin describing Type C and Type KD Boilers. See description in Sweet's Architectural File of full line of heating boilers.

Boiler Builders for 59 Years

THE INTERNATIONAL BOILER WORKS CO.
HEATING DIVISION
300 BIRCH STREET · EAST STROUDSBURG, PA.

HEATING BOILERS TYPES C, KD, DD, K
POWER BOILERS TYPES CR, FR, LFR, LFS

LIGHTING PROBLEMS SIMPLIFIED!



JOLECO FLUORESCENTS PROVIDE UNLIMITED FREEDOM OF DESIGN!

Joleco Fluorescents are used in the General American Life Insurance Bldg., one of St. Louis' most efficiently designed office buildings.

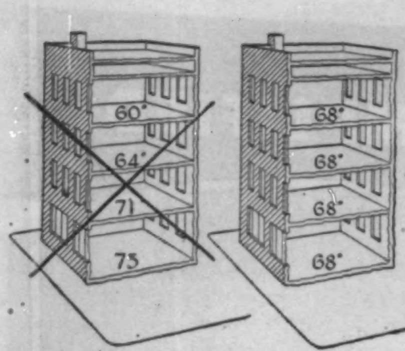
GENERAL AMERICAN
LIFE INSURANCE CO

Offering unrestricted scope for solving the most difficult lighting problems, Joleco Fluorescents fulfill every specification demanding graceful beauty, maximum efficient illumination, low first cost and trouble-free, labor-saving maintenance.

Surprising new developments now supplement those exclusive features which have built for Joleco enviable recognition and acceptance — unusual application of engineering principles to increase lighting intensity — single top and bottom plate construction for quick installation — easily removable reflector plates for simplicity of maintenance — scientifically designed ventilation system for instant heat dissipation — and many others soon to be announced.

Investigate the advantages of Joleco Fluorescents. Ask Joleco Engineers who gladly offer their counsel and aid in solving *your* lighting problems. Write without obligation!

JOLECO
CORPORATION
Designers and Manufacturers
FLUORESCENT LIGHTING FIXTURES
2512-18 BALDWIN ST. ST. LOUIS 6, MO.



Controls mean Better Heating

Good heating means adequate heat at a reasonable price—rooms that are always comfortably warm . . . No cold waves . . . no sudden rushes of heat . . . no waste of rationed fuel.

The logical answer to overheating and underheating; the logical answer to fuel waste is control—control that delivers the right amount of steam to each radiator.

Webster Moderator Systems of Steam Heating are "Controlled-by-the-Weather." An Outdoor Thermostat automatically adjusts the delivery rate of heat to agree with changes in outdoor temperatures. Through accurate orificing, all radiators receive steam at the same time, in varied quantities as needed.

More Heat with Less Fuel

Seven out of ten large buildings in America (many less than ten years old) can get up to 33 per cent more heat out of the fuel consumed! . . . Heating Engineers surveyed thousands of buildings to give owners an accurate estimate of the extra-heat-per-unit-of-fuel to be achieved with proper controls. Write today for "Performance Facts". Address Dept. AR-5.

MODERATOR
WARREN WEBSTER & COMPANY CAMDEN N.J.

Small Control Cabinet of the Webster EH-10 Moderator System. It can be used to automatically operate a motorized valve in steam mains, or directly control burner or stoker of your boiler. Used chiefly for the small and medium size building.

WARREN WEBSTER & CO., Camden, N. J.
Pioneers of the Vacuum System of Steam Heating
Representatives in principal Cities : : Est. 1888
In Canada, Darling Brothers, Limited, Montreal

Fuel-Saving Starts With CONTROL

AUTOMATIC Webster Steam Heating

FOR BETTER BUILDING

(Continued from page 136)

regardless of weather conditions.

Para-Plastic is prepared for heating and pouring for patching or coating over old roofs. According to the manufacturers, it is suitable also as a lap seal material for flashings around chimneys, coping seal, for skylights and filling crevices in places where vermin are to be eliminated, for filling in floor crevices and other crevices about a building. It can be applied to wood, steel, glass, stone, concrete, etc.

Prepared also in a cold premolded state, Para-Plastic can be used for expansion joint purposes, and is said to be excellent for bonding material where planking and waterproofing is required over railroads, bridges, overpasses for tile and sewer pipe jointing, etc. It has already been widely used for concrete expansion and contraction joints in highway and airport construction, the manufacturers report. It is said not to run in extremely hot weather, or to crack during cold spells. Servicised Products Corp., 6051 W. 65th St., Chicago 38.

STAINPROOF FABRICS

Brightly colored draperies that can be wiped clean with a damp cloth, and damask linen tablecloths that can't be stained by gravy are among the postwar developments foreseen by Monsanto Chemical Company as the outgrowth of its wartime research into the plastic coating of fabrics.

Plastic-coated shower curtains, and wall coverings which could be cleaned by water sprayed from a garden hose are other Monsanto predictions.

EDUCATION IN HEATING

A large-scale educational program in automatic heating was inaugurated last month by the Minneapolis-Honeywell Regulator Company, 2804 Fourth Ave. S., Minneapolis 8, Minn.

Prepared by Honeywell technicians in cooperation with a company specializing in visual education, the complete course extends for four 2½-hour meetings. More than 800 slides, many of them in color, are used.

Primary purpose of the program is to teach the application of automatic controls and their installation and maintenance in connection with all types of heating systems using all kinds of fuel.

Started in Chicago and New York, the courses will eventually be held in all sections of the country where company branches are maintained when a sufficient number of people indicate a desire to enroll. They are open to anyone interested in heating.

PRATT & WHITNEY
SMALL TOOLS • GAGES

Advise Clients to Order ANCHOR Fence at pre-war prices NOW

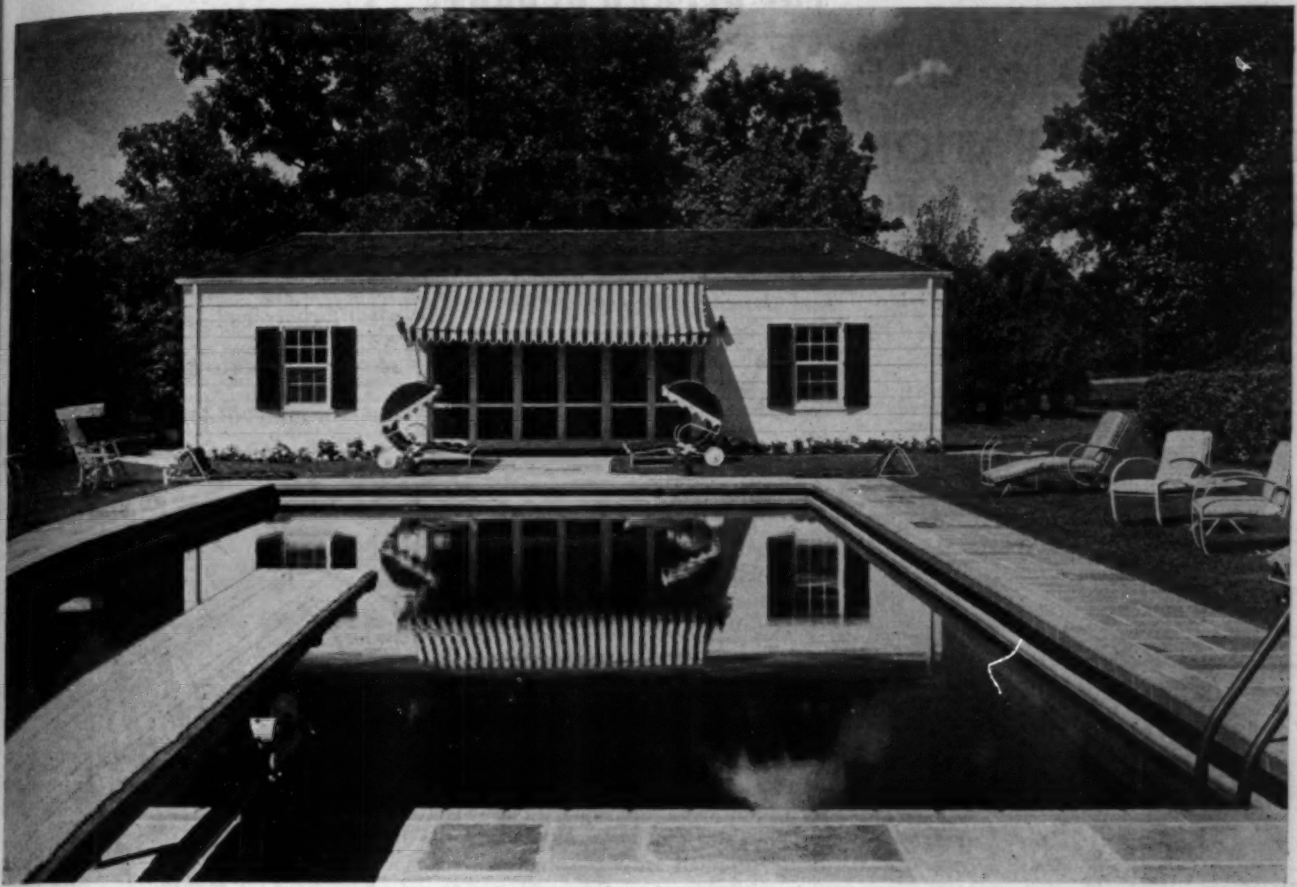
BY ordering Anchor Fence now your clients can get the benefit of pre-war prices . . . plus Anchor service in expediting erection . . . plus exclusive Anchor features which are found in no other chain link fence. For example, deep driven *Anchors* hold Anchor Fence permanently erect and in line in any soil . . . permit erection in any climate or weather . . . yet make it easy to take up and relocate Anchor Fence *without loss* if changes in the enclosed area are required later.

Free Specification Manuals for Your A. I. A. File 14-K

Let us send you our Specification Manuals on Anchor Chain Link and Anchor-Weld Iron Picket fences. Prepared especially for Architects and Engineers, they contain installation photographs and sectional drawings . . . describe the various heights, weights, structural features and applications of Anchor fences and gates . . . include helpful sample specifications for many types of fencing jobs. These books will prove helpful to you in planning many postwar projects. For free copies address: Anchor Post Fence Co., 6600 Eastern Ave., Baltimore 24, Maryland.

ANCHOR FENCE

Nation-Wide Sales and Erecting Service



DESIGNED FOR HEALTH — WITH CHLORINATION

More and more home owners are looking forward to swimming pools of their own. Pools which — like the best municipal and commercial pools — offer recreation plus the assured safety of adequate chlorination.

W&T Chlorinators for every type of pool preclude the danger of water borne disease and also help inhibit objectionable algae growths. Yet operation is so simple that the gardener, or caretaker, can adequately supervise the equipment.

So, in planning your postwar pool be sure to specify W&T chlorination equipment.

WALLACE & TIERNAN

COMPANY, INC.

Manufacturers of Chlorine and Ammonia Control Apparatus

NEWARK 1, NEW JERSEY

Represented in Principal Cities

How TO HANDLE HEAT GENERATION FOR RADIANT PANEL SYSTEMS

H.B. Smith
CAST-IRON BOILERS

Current interest in Radiant Panel heating systems naturally has centered on aspects of heat distribution.

While generation problems are less radical, there are some interesting points with which the architect, engineer, and contractor should be familiar.

How to handle heat generation for Radiant Heating Systems may help you in this connection. A copy will gladly be sent you upon request.

H.B. Smith
CAST-IRON BOILERS

MAIL THE COUPON BELOW

The H. B. Smith Co., Inc.
55 Main St., Westfield, Mass.

Please send your folder on Generation Aspects of Radiant Heating to:

THE RECORD REPORTS

(Continued from page 132)

The list, reprinted from the 12th Annual Report of the E.C.P.D., is a revision of the original 1936 list. It covers natural science, philosophy, economics and sociology, psychology, business and industrial management, literature, history, biography, travel and the fine arts. Copies may be obtained by addressing the E.C.P.D., 29 W. 39th St., New York 18. Price, 10 cents each. Canadian inquiries should be addressed to The Engineering Institute of Canada, 2050 Mansfield St., Montreal 2.

LUMBER FOR OVERSEAS

Probably in reply to the frequently expressed criticism of the FEA's prefabrication projects for England and France, WPB has announced that lumber authorized for rehabilitation use overseas and for construction in this country of prefabricated housing for exports amounts to less than one per cent of anticipated 1945 domestic lumber production. Amounts authorized total about 280,000,000 board feet, WPB reports, and species and grades being supplied are those that will conflict as little as possible with military and essential civilian requirements.

OFFICE NOTES

New Firms

Henry S. Churchill, O. Kline Fulmer, Homer Hoyt and Raymond O. Bowers have announced the formation

(Continued on page 142)

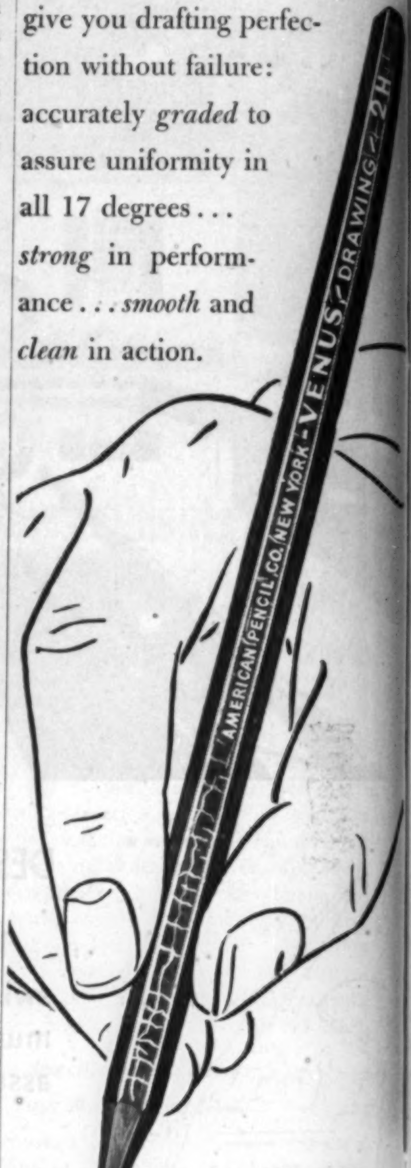
OPPORTUNITIES AVAILABLE

PRODUCT DESIGN ENGINEER: Graduate architect or industrial design engineer, under 35 years of age, to initiate and develop new consumer product designs in glass. Should have manufacturing experience and ability to coordinate his work with Sales, Production and Research departments.

Here is a real opportunity to join America's leading glass manufacturing company. This is a new position, with excellent prospects for the man willing and able to do creative work. If not now engaged in essential war work, write Personnel Department, giving complete description of education, professional experience, draft status. Enclose recent photograph. Salary commensurate with abilities. All replies confidential. Corning Glass Works. Corning, N. Y.

ARCHITECTURAL DESIGNER & DRAFTSMEN: Permanent Openings in Established St. Louis office. Principal practice—Churches, Schools, Hospitals. Give age, experience. State full particulars.
Box 36, ARCHITECTURAL RECORD, *119 West 40th Street, New York 18, N. Y.*

Venus Drawing Pencils are engineered to give you drafting perfection without failure: accurately *graded* to assure uniformity in all 17 degrees . . . *strong* in performance . . . *smooth* and *clean* in action.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Put VENUS to the test on *your* drawing board. Send us a postcard or a note for two free samples. *Specify* degrees wanted.

VENUS
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AMERICAN LEAD PENCIL COMPANY, HOBOKEN, NEW JERSEY

The Proper Equipment . . . CORRECTLY APPLIED

JOHNSON
Automatic Temperature
and Air Conditioning
CONTROL

An example of a Johnson *Summer-Winter* Thermostat and Humidostat for year-'round Individual Room Control.

On the Job—to *Do* the Job

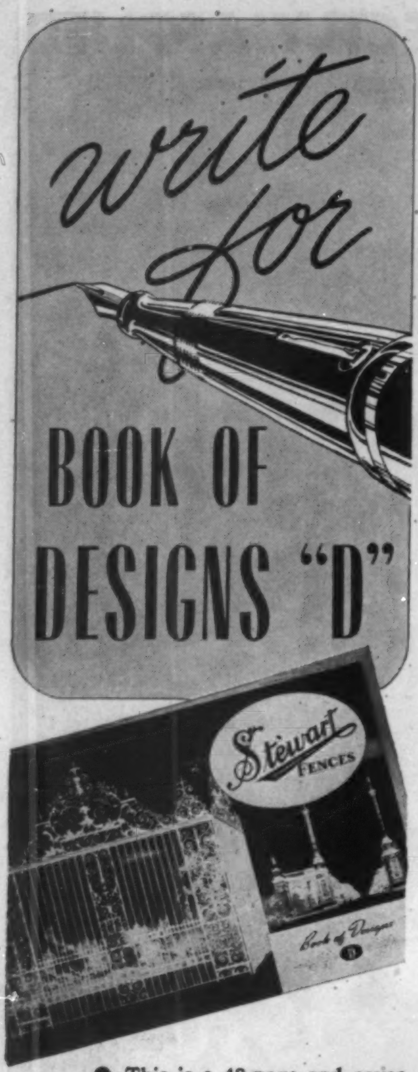
Look at the heating and air conditioning system in any building—residential, commercial, public, institutional, industrial. Each installation presents an individual problem, calling for the best specialized knowledge. Manufacturing fine automatic temperature control equipment is not enough—*correct application* is also necessary. That is why there are Johnson engineers in every large city.

Johnson men . . . everywhere . . . cooperate with architects, consulting engineers, contractors, and owners. Years of training and experience enable them to bring expert knowledge to bear on the proper application of every element in the complete control system.

Their obligation does not end with manufacturing and selling the *best* in automatic temperature control equipment. That is why they are called upon, time and again, to aid in solving temperature control problems for the same people. On *your* next temperature control problem, ask your heating and air conditioning engineer or contractor about Johnson . . . or call a Johnson engineer from a nearby branch.

ARMY E NAVY
DESIGN
MANUFACTURE
INSTALLATION
SERVICE

JOHNSON
SERVICE COMPANY
MILWAUKEE 2, WISCONSIN
AUTOMATIC TEMPERATURE AND AIR CONDITIONING CONTROL



● This is a 48-page and cover book of outstanding Stewart Iron Fence and Ornamental Iron Work installations. It illustrates the possibilities of plain and ornamental iron fence, gates and gateway arches for the beautification and protection of all types of property. A copy will be sent on request. ¶ Since 1886 Stewart has worked with architects in the adaptation of standard fence designs to certain types of property, and in the faithful reproduction in iron, of drawings and specifications to meet specific requirements. Right now the manufacture of iron fence is restricted, but when civilian production is resumed, it will again be available. ¶ You may also want these Stewart catalogues: *No. 81 covers Standard Iron Fence with Channel Rails. No. 80, Standard Iron Fence with Angle Rails. No. 79, Standard Chain Link Wire Fences and Gates. No. R-38, Railings, Lanterns, Interior Gates, etc. No. W-40, Window Guards, Wire Mesh Partitions, Folding Gates, etc. No. I-42, Industrial Fence Specification Manual.* When writing please mention by name or number the catalogues desired.

THE STEWART IRON WORKS CO., Inc.
1277 Stewart Block, Cincinnati 1, Ohio
Experts in Metal Fabrications Since 1886

Stewart IRON and WIRE FENCES

(Continued from page 140)

of Churchill-Fulmer Associates, a new firm offering a complete service extending from preliminary economic analysis through planning, architecture, engineering, construction and management. Address: 56 W. 45th St., New York 19.

Engineers long associated with Henry J. Kaiser, and responsible for the design and construction of many outstanding projects, have been organized as a permanent group known as Kaiser Engineers, with headquarters in the Kaiser Building, Oakland, Calif. The company will undertake work in any part of the world.

Offices Reopened

Irving P. Marks, R.A., has reopened his offices for the practice of architecture after having served with the U. S. Army Engineers. Address: Temple Bar Bldg., 44 Court St., Brooklyn, N. Y.

Howard Moise, A.I.A., is resuming active practice, with offices at 71 Panoramic Way, Berkeley 4, and 260 California St., San Francisco 11, Cal.

New Addresses

Richard Hawley Cutting, architect and engineer, has moved to Room 405, 4900 Euclid Bldg., Cleveland, Ohio.

John Y. Sloan, architect, and John A. Beane, engineer, have moved to 296 Delaware Ave., Buffalo 2, N. Y.

NEW A.S.A.E. PRESIDENT

Newly elected president of the American Society of Agricultural Engineers is J. D. Long, of Tacoma, Wash., chief of the research department of Douglas Fir Plywood Association.

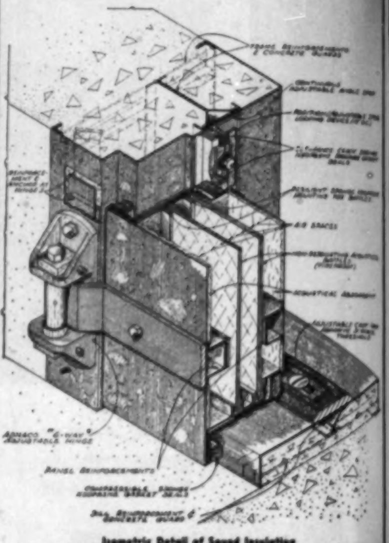
Before joining the plywood industry in 1940, Mr. Long was assistant professor of agricultural engineering at the University of California College of Agriculture. He has served on several technical and administrative committees of the Society, and as chairman of the farm structures division. He will take office on July 1. The Society was organized in 1907.

HENRY T. PHELPS

Henry T. Phelps, a charter member and past state director of the Texas Society of Architects, and past president of the San Antonio Section of the T.S.A., died at his home on December 4th. He was 72.

Mr. Phelps had practiced architecture in Texas for 50 years. A native of Del Rio, Texas, he was a veteran of the Spanish-American War.

INDUSTRIAL
SOUND PROOF
DOORS
Must Be Both
DESIGNED AND
ENGINEERED



Isometric Detail of Sound Insulating
ACOUSTIDOR CONSTRUCTION AND INSTALLATION

Modern industry's complex demands, today, for sound insulation and isolating, for fume and gas seals, for fire and explosion barriers, combined with easy passage of men and materials, makes the designing of door closures a matter of specialized engineering.

FIRECRAFT has been designing and engineering such complex installations to satisfy the most rigid war-production demands. We have produced so many thousand unusual purpose doors that we are recognized the country over as qualified

INDUSTRIAL DOOR SPECIALISTS

Should you have a reconversion—or new—project involving doors, it will be to your advantage to consult with us.

FIRECRAFT

FIRECRAFT Engineers have just issued a binder of scale details and specifications for all metal SOUND PROOF DOORS for the use of the busy architect.

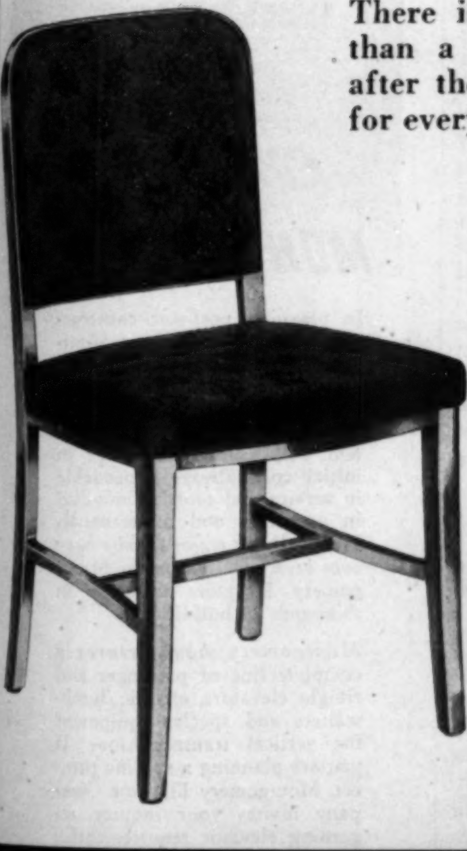
Write today for your copy. On your letterhead, please.

Firecraft Door Division
FIRECRAFT CORPORATION
3321 South Wallace Street, Chicago 16, Ill

HAVE A CHAIR!

Chairs are such common things that their importance in the scheme of living is frequently overlooked. There are big chairs and little chairs, beautiful chairs and ugly chairs, comfortable chairs and backbreakers, unusual chairs and ordinary chairs but there is nothing ordinary about Goodform Aluminum Chairs. They are in a class by themselves. They are primarily designed for comfort. Their sparkling aluminum finish is beautiful when new and is easily kept that way even after many years of hard usage. Their sturdy welded construction makes them strong and durable. They will not split, splinter, squeak or pull apart. They will serve for a lifetime.

There is no better investment in seating than a Goodform Aluminum Chair and after the war, there will be one available for every purpose.



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